Understanding the diffusion of the idea of contact with nature to enhance health: An Eliasian case study

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Table of contents

List of boxes

List of figures

List of tables

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Abstract

In public health working in a less medical and more preventative way by focussing on the wider determinants of health, inter-sectoral collaboration, and evidence based practice have been advocated as ways to raise the health status of the population. In recent years, the idea of contact with nature to enhance health has come to the fore as one way to tackle current public health challenges: for example, diabetes, overweight and obesity, chronic liver disease, hypertension and mental health problems. Yet little is known about how this idea has diffused through the interdependent figurations of researchers, policy makers and into use through the actions of people in local organisations. The processes connecting these interdependent figurations are complex and, in the case of contact with nature, are not well understood. This is the research problem this thesis seeks to address, that is to say, the evidence into action process of an idea.

The theoretical perspective of Norbert Elias is used throughout the thesis to analyse the diffusion process of the idea. Elias's work is concerned with long term processes in human history; in adherence with his approach to sociological inquiry a historical context going back more than three generations provides the backdrop for the empirical work. An examination of the context illuminated the significance of the decade of the 1970s onwards to the present use of the idea of contact with nature in public health; notably the shift in discourse about hazards, risk and threats from nature to one of health enhancement. Norbert Elias's own thinking and discourse about contact with nature to enhance health is used as a touchstone for the analysis.

The empirical data in the thesis is generated through mixed methods, principally bibliometrics and content analysis, to reveal the diffusion and development of the idea over time and to show the way that the idea is framed when used by researchers, policy makers and by people within organisations. An Eliasian approach to case study methodology is utilised. Sub-study 1 revealed that empirical research literature about the idea emerged in the 1970s and that the number of publications per annum increased year on year until 2005. The empirical research was generated by researchers located across several continents and from different disciplines. Early researchers into the idea investigated the psychological benefits whilst latterly epidemiological studies have come to the fore. Sub-study 2 showed that the idea was taken up widely by policy makers in four government departments in England from 2000, with a peak in 2011. There were more references to the idea in the policy documents of the Department for Environment, Food and Rural Affairs than other government departments; the references of this department took an ecosystem services stance. Sub-study 3 showed that during July to October 2013 and within Greater Manchester, 36 organisations were providing and/or promoting activities which involved the idea of contact with nature on their websites. Of these 36 organisations, 16 (44%) were conservation/wildlife based agencies whose use of the idea included the pursuit of their own agendas and purposes.

An analysis of the results, using the theoretical perspective of Norbert Elias, shows the involvement of many figurations of interdependent individuals, and the long term, largely unplanned, and non-linear character of the diffusion process. The empirical findings reflect the transdisciplinary nature of the research, inter-sectoral collaboration across government departments within policy, and the adoption of the idea outside of the traditional health service. People and thinking from the environment sector have greatly influenced the diffusion and development of the idea, and their involvement has widened the scope and form of public health action.

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Chapter 1: Introduction

1.1 Aim

The overarching aim of this thesis is to explore how an idea diffuses into policy and into organisational use. More specifically, the thesis is concerned with understanding how the idea of 'contact with nature' – an idea that has become increasingly prevalent in the public health and health promotion literature – has diffused into national policy in England and has been taken up by people and used within organisations by focusing on those providing services in the Greater Manchester area. In studying the diffusion of the idea of contact with nature the thesis is anchored within the field of evidence usage, an issue that has been debated over several decades in terms of the extent to which contemporary public health is evidence based, or 'evidence informed' (Thurston, 2014). This debate relates to policy development and policy implementation, that is to say, how organisations make sense of and use ideas – some of which may to a greater or lesser extent be informed by evidence – to deliver public health actions.

In studying this process the work of the figurational sociologist Norbert Elias has been applied. Elias's work is useful because it sensitises the researcher, when undertaking empirical inquiry, to take a long term view in order to reveal trends and countertrends, and to examine *processes*, such as the diffusion of ideas, and not static states.

1.2 Background and rationale to the study

The idea of contact with nature to enhance health has come to the fore in public health in recent years. The idea – which has a salutogenic orientation, that is to say, is a health promoting idea (Antonovsky, 1979) – is based on the notion of affordances (opportunities in the environment) that nature provides to people in terms of health and wellbeing. By studying the diffusion of this idea it is anticipated that the research can contribute to the expanding knowledge base on how ideas, (especially those within the public health and health promotion field), diffuse

through figurations of complex interdependencies and are used by people within organisations.

The foundation of this thesis originated from a series of personal reflections, at the end of the first decade of the 21st Century, that the use of the idea of contact with nature to enhance health was becoming more prevalent in the public health field and there were some indications that its use was transcending, and possibly bypassing (to a greater or lesser degree), the National Health Service (NHS), the established health system in the United Kingdom (UK). The idea appeared to be diffusing through a broad based public health system, that is to say, through "a complex network of individuals and organisations that have the potential to play critical roles in creating the conditions for health" (Institute of Medicine, 2003, p.28). If this was the case, it connects with ideas central to contemporary public health, namely those relating to a focus on 'conditions for health' (rather than individuals) alongside the importance of organizations outside of the NHS taking some responsibility for promoting health.

The requirement for a broad based public health system to address the complexity associated with improving population health, reducing health inequalities, and addressing unhealthy lifestyles and behaviours appears in much of the contemporary literature in the discipline (Rayner & Lang, 2012). But despite increased thinking, writing and action relating to the complexity of public health the inherent difficulties of raising the population's health status, particularly in relation to narrowing inequalities in health, remain as problems to be solved (Marmot, 2010). Grint (2008) refers to these problems as wicked problems because they are "deeply complex social problems that sit across and between different government departments and institutions" (p.12). While the value of inter-sectoral collaboration to address complex problems has been argued for over several decades (for example, World Health Organization [WHO], 1986), beyond the rhetoric, this too has been a challenge. There seem to be at least two reasons for this: first, some ostensibly non-health sectors and organisations may be reluctant to engage with health issues and, second, they may be unlikely to work in alliances with organisations that have differing values, philosophies and priorities (Gardner, 2005). Furthermore, people in such organisations may not perceive themselves to be part of the 'wider public

workforce' as commonly articulated within the public health discipline (Orme, Powell, Taylor & Grey, 2007).

In England, current public health challenges in relation to diabetes, overweight and obesity, chronic liver disease, hypertension and mental health problems are increasing (Department of Health [DH], 2010). Such health problems exist within the context of an ageing population and the challenges make considerable demands on the health care system, which increasingly relies on technological and pharmacological approaches to treatment. In a context of curtailed public spending health care systems are put under increasing strain.

For this entrenched and well recognised set of problems, Wanless (2002, 2004) argued for a need to reduce the demand on the health care system through a concerted focus on prevention, particularly through lower cost ways of addressing such challenges. He also argued for the importance of basing approaches on evidence of effectiveness. Notwithstanding the difficulties of generating robust evidence of effectiveness in public health, recent years have seen an expansion of research that has contributed to the evidence base relating to the wider determinants of health as well as the determinants of social inequalities in health (see for example, World Health Organization's Commission on the Social Determinants of Health (2008), and Marmot (2010)). However, successive governments have continued to focus on the 'lifestyle model of disease' (Hansen & Easthope, 2007): a policy focus that has been criticised for being an over simplistic approach to a complex phenomenon (Vallgårda, 2011), divorcing as it does disease causality from social, cultural, economic, and environmental factors (Thurston, 2014).

Since 1997 in particular, the need for public health policy and practice – including that within organisations – to be informed by robust evidence of effectiveness has been argued for by the national government of the UK (Sutcliffe & Court, 2005). However, the processes surrounding the diffusion of an idea through the interdependent figurations of researchers, policy makers and into organisational use are not well understood, and this is particularly the case with regard to the diffusion of the idea of contact with nature to promote health: this is the research problem this thesis seeks to address. First impressions about the idea of contact with nature to

enhance health are that it is an idea that is becoming more visible, that is to say, is diffusing. That being the case then a critical examination of the diffusion process could offer new insights into how an idea has been researched, is appearing in policy and perhaps changing public health action at the organisational level. Further insights may also be elicited about the diffusion process itself which will add to the knowledge within the health promotion tradition of diffusion research (Greenhalgh, Robert, Bate, Macfarlane, & Kyriakidou, 2005). In this regard, the application of figurational sociology to the research question offers considerable potential in shedding light on this issue and generating a more adequate understanding of a complex and little understood process.

The idea of contact with nature to enhance health has an evidence base; systematic reviews of the empirical research (for example, Croucher, Myers & Bretherton, 2007) conclude that contact with nature can have positive benefits for physical, mental, and social health. The benefits can be summarised as: i) recovery from stress and attention fatigue, ii) encouragement to exercise, iii) facilitation of social contact, and iv) influence on child development (Health Council of Netherlands, 2004).

While much has been written about the health and wellbeing benefits associated with contact with nature, there are very few references in the literature to anything akin to the concept of diffusion, that is to say, how far the idea has spread or travelled, over what kind of timescale and with little attention to the key actors involved in processes of diffusion. Maller, Townsend, Pryor, Brown, and St Leger (2006), present a summary of empirical, theoretical and anecdotal evidence drawn from a literature review of the human health benefits of contact with nature. In the abstract to that article they write:

> Whilst urban-dwelling individuals who seek out parks and gardens appear to intuitively understand the personal health and well-being benefits arising from 'contact with nature', public health strategies are yet to maximize the untapped resource nature provides, including the benefits of nature contact as an upstream health promotion intervention for populations. (Maller et al., p.45)

Thus, Maller et al. (2006) conclude that contact with nature is an underutilised resource, a point also made by Hansen-Ketchum and Halpenny (2011) who suggest

that little is known about how the evidence is used by decision makers and practitioners and that this has "implications for research, practice and policy in health promotion" (p.101).

Others reflect on how far the idea may have diffused. In 2010 Dr William Bird, a practicing General Practitioner and advocate of the idea of contact with nature to enhance health, was an invited keynote speaker at the *International Healthy Parks Healthy People Congress* in Melbourne, Australia. Bird was responsible for setting up Health Walks and the Green Gym® in the UK during the late 1990s. A Green Gym® is a scheme, organised by The Conservation Volunteers, that supports "people in gardening or local environmental improvement while providing opportunities for exercise and developing social networks" (Department of Health, 2004, p.79); hence the natural environment is used to increase physical activity and wellbeing. This is one of the earliest indications that organisations beyond the health service were engaging in various ways with the health and wellbeing agenda, traditionally not a significant aspect of their work or mission as a voluntary organisation. Whilst at the conference Bird gave a recorded interview in which he spoke about what he saw as the vital role that parks specifically and nature more generally, play in enhancing health and argued that there was a need for the medical world to shift to a model of prevention in addition to one of treatment. The following is an excerpt from that interview:

> We are not going to be able to get this linkage between humans and the natural environment unless we all work together…The Department of Health are now pushing physical activity and mental health and using the natural environment as part of a solution.
>
> …we have to be able to talk to the medics and the health service who have the big budgets to shift it from treatment to prevention… The health sector is looking for partners and one of those partners is the parks and I think what we will find is that partnerships will develop by necessity, not by choice from the health side, and over the next I think it will be 10 years probably 20 we will see a transformation in the environment being used for health but it is going to take time and we mustn't get impatient. It took 30 years for smoking to come right the way through. It's taken about 20 years so far for physical activity and this will be another 20 to 30 years. (Bird, 2010)

In the interview Bird speculates about how long it would be for the idea of contact with nature (though he uses the term 'natural environment' which is often used interchangeably with 'nature', see Section 1.3) to enhance health to become an integral part of health services nationally and globally. Critically reflecting on this interview raises questions that are yet to be addressed, that is to say, how far the idea has already diffused and why further diffusion may take a long time, as well as who the key actors might be and what their motivations might be for using the idea of contact with nature to enhance health. Bird also suggests that dependency on the health sector alone will not be sufficient to fully embed the idea and that working with other partners will be necessary. Thus, the take up of the idea may be contingent on a multi-agency interdependent network of practitioners. The final sentence of the excerpt also raises questions about how the diffusion process can be examined over several decades, as much diffusion research is about the diffusion of innovations over considerably shorter time spans and spatial distances and often within a more circumscribed field of people. Much of the diffusion research has also been descriptive rather than explanatory in terms of understanding the pattern of diffusion temporally and spatially. It is to these issues in particular that this thesis is addressed.

1.3 Presentation of the study

The literature on diffusion of ideas is introduced and critically reviewed first (Chapter 2). Given the focus of the thesis – that is to say, on how an idea diffuses – the chapter provides an important foundation to the thesis by establishing what is already known about this subject. Thus, a review of how ideas, including those underpinned by empirical research evidence, enter policy and organisational use is presented. The process is critically reviewed with reference to literature on the diffusion of innovations, the policy making process, and evidence based policy and practice. How an idea is 'adopted' and diffuses is shown to be a complex and non-linear process.

In reviewing the diffusion literature the work of Rogers (2003) is expounded. The argument is presented that his conventional approach to studying diffusion, and that

of others who use his work, is not an adequate way to explain the diffusion of an idea through several generations, within and across policy and into multiple organisations.

In this regard, Elias's sociological approach, which is figurational (also called processual), offers the potential for providing a more adequate way of analysing the diffusion of the idea than the theoretical and methodological approaches usually used in diffusion studies. One essential difference is the use of Elias's (2000) concept of figuration rather than that of a social system as defined by Rogers (2003). Figurations are dynamic networks of interdependent people across unbounded, temporally and spatially, social networks. Within a figuration, actions, to a greater or lesser degree, are related to shifting power balances. It is anticipated that by using a figurational perspective, within a historical context, a more adequate understanding of the diffusion of the idea of contact with nature to enhance health will be generated.

The sociology and work of Norbert Elias is presented in more detail in Chapter 3. Elias's work offers an alternative and robust theoretical perspective with which to understand and explain the diffusion of ideas and, specifically in this thesis, the diffusion of the idea of contact with nature to enhance health. His work, it is argued, can assist in the study of how ideas transcend generations and diffuse through changing patterns of complex interdependencies. As others have argued, the application of Elias's work is valuable to the understanding of the long term and unplanned aspects of diffusion processes (see for example Dopson, 2005).

In using Elias's figurational sociology to analyse the diffusion of the idea of contact with nature to enhance health, Elias's own views on contact with nature are also explored. His early writings about the subject date from around the 1920s. Elias's later views are from the 1970s and 1980s. Analysis of his writings illustrates how Elias viewed nature as a source of health. He also viewed nature as something to be controlled. This view underpins his theory of sociology in which nature is one of a 'triad of basic controls' (Elias, 1978). Elias's own views on nature, especially his writing about control, are explicated in Chapter 3, because they have relevance for understanding the diffusion of the idea of contact with nature to enhance health. In using Elias's theory and, in particular, his ideas about nature, cognisance has been

taken of the decade in which the theory was developed, that is to say the late 1970s when, as Chapter 4 shows, much of the language about nature in relation to health was about controlling environmental hazards and threats and not specifically about viewing the environment in salutogenic terms.

In Chapter 4 the visibility or otherwise of the idea that nature provides benefits to health is presented. This chapter is not intrinsically about the relationship between health and nature or about the environment per se. Nor does it explicitly contain content relating to the quality of the evidence base about the idea of contact with nature to enhance health. The purpose of Chapter 4 is to chart what is known about the appearance and use of the idea of contact with nature to enhance health before the empirical work for this thesis was undertaken. This serves as background and historical context. It complements the previous two chapters on the theory of diffusion and Elias's figurational sociology in that it illustrates that the idea of contact with nature to enhance health is not a new idea. In other words, the idea has diffused over time and taken different forms that have reflected the social, political and economic context of the time. Lawrence (1984) argues that a historical perspective refers to understanding a subject in light of its earliest phases and subsequent development, that is to say, one's vision of the present is sharpened through a historical perspective. Further, Lawrence suggests that a historical perspective can aid research design. It can also guard against the cultural belief that with the passage of time everything improves (Nisbet, 1980) and that ideas or 'innovations' are new. To some extent then, the emergence of the idea in the late 20th and early 21st Century represents a phenomenon that might be described – at least in simplistic terms – as 'new wine in old bottles'. Chapter 4, together with Chapters 2 and 3, serves to provide sensitising concepts and is, importantly, the fabric out of which can be constructed an understanding of the diffusion process (Górnicka, Liston & Mennell, 2015). It is shown in Chapter 4 that the idea is visible in a range of policies, charters, models and frameworks relevant to public health. A full justification of this approach is given in Chapter 3 through reference to the work of Elias who also advocated that sociological research should be historically grounded and should go back at least three generations.

Within the chapter it is shown that ideas about contact with nature to enhance health have appeared at different times, have had currency in a variety of domains and have been reframed by different groups. Because of the significance of the 1970s onwards to the re-emergence of the idea, parts of Chapter 4 focus on the influence of the environment sector, the creation of the *Ottawa Charter for Health Promotion* (World Health Organisation, 1986) and the context of the new public health.

Arising out of these three foundational chapters a series of questions have been developed, later addressed in the empirical work of this thesis, that reflect gaps in knowledge about the diffusion of the idea of contact with nature to enhance health. An overarching research question for the thesis is *how has the idea of contact with nature to enhance health diffused through figurations of researchers, policy makers and into use through the actions of people in local organisations?*

Chapter 5 contains details of the methodology used to address this question. The overarching empirical research project is framed and presented as an Eliasian case study using mixed methods. The Chapter also discusses the philosophical concepts of ontology and epistemology in relation to the work of Norbert Elias in order to justify the methodology in Eliasian terms. The historical perspective (see Chapter 4) provides a contextual backdrop to the case study. In this research, the 'case' is a study of the diffusion process of an idea from research evidence to action, that is to say, the diffusion of the idea of contact with nature to enhance health through a series of interdependent figurations.

Within the *one* case study there are three interdependent sub-studies (1, 2, and 3) based on different methods, which are set out in Chapters 6, 7 and 8 respectively. The focus of the three studies is on different dimensions of the diffusion process relating to the idea of contact with nature to enhance health. The focus of sub-study 1 (Chapter 6) is the emergence of the idea in research; in sub-study 2 (Chapter 7) the focus is on the diffusion process in relation to national policy documents between 2000 and 2012. In sub-study 3 (Chapter 8) the diffusion process is explored with reference to a range of organisations based in Greater Manchester. Thus the investigation of the diffusion of the idea in Sub-study 3 is about the exploration of processes at an organisational level rather than the end point of delivery.

Each of these chapters follows the same sequence: introduction → questions → method → results → discussion. The questions explored in each study are:

Sub-study 1 - The emergence and framing of the idea of contact with nature to enhance health in the research literature.

- When did the empirical evidence first emerge?
- What has been the number of publications per year?
- Where has the empirical evidence been published?
- Who, in the research figuration, are the key actors producing the empirical evidence?
- What is the most frequently cited empirically based evidence?
- How has the idea been framed in the research literature?

Sub-study 2 - The emergence and framing of the idea of contact with nature to enhance health in the contemporary policy literature of England.

- When does the idea emerge in contemporary policy and to what extent does the idea appear?
- How have policy makers framed the idea in contemporary policy?
- How does this vary across the different government departments?

Sub-study 3 - The appearance and framing of the idea of contact with nature to enhance health in organisations in Greater Manchester.

- What types of organisations are using the idea of contact with nature to enhance health in their work?
- What are the different types of activity?
- How and in what ways is the idea revealed by these organisations?

In Chapter 9 an overarching discussion draws the findings from the three sub-studies together. The chapter concludes with a reflection on the limitations of the research, the wider implications of the findings and areas for further research.

1.4 A note about the terminology used in the study

Within the research and policy literature the terms 'health' and 'wellbeing' are sometimes used synonymously. Similarly 'nature' and the 'natural environment' are often used interchangeably. Further, the term 'green space' tends to be applied as an umbrella term for all the different natural and human maintained habitats within urban areas. Green space comprises mosaics of habitats including forests, grasslands, wetlands, formal parks and gardens, churchyards, incidental green space, and private gardens (Clark & Jauhiainen, 2006). The term blue space is increasingly used to refer to rivers, ponds, lakes, estuaries, marinas, seas and shore lines (Clark & Jauhiainen, 2006). The natural environment embraces blue and green space as well as physical and biological materials. In tracing the appearance of the idea of contact with nature to enhance health since the early 19th Century through to contemporary times the words and phrases 'nature', 'the natural environment', 'contact with nature' and 'green space' have been used interchangeably at times.

The use of the term 'public health' is used in a broad sense to include the term 'health promotion' based on the World Health Organizations's conceptualisation of the term as "the process of enabling people to increase control over, and to improve, their health. It moves beyond a focus on individual behaviour towards a wide range of social and environmental interventions" (WHO, 2012). Further, health promotion is taken to be an action orientated endeavour that operates across disciplines and sectors (Petticrew & Roberts, 2003), and not the sole province of health practitioners.

The word 'ecosystem' in which living communities (plants, animals, and micro-organisms) interact functionally with the non-living environment (Millennium Ecosystem Assessment, 2005) is defined in Chapter 4, Section 4.6. The term 'ecosystem services' has increasingly been used in policy to refer to "the benefits provided by ecosystems that contribute to making human life both possible and worth living" (United Kingdom National Ecosystem Assessment, 2015). The services are classified into four categories; these are discussed further in Chapter 4, Section 4.7.

Chapter 2: The diffusion of ideas

2.1 Introduction

There is an emerging consensus that how an idea or research evidence are taken up in policy and practice is not a straightforward process; Crosswaite & Curtice (1994) for example, have described is as subtle and indirect. Over several decades, Rogers (2003) has been at the forefront of research that has been concerned with understanding how an innovation – that is to say how "an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (p.12) – diffuses. However, a review of his work, and that of other diffusion theorists, reveals the limitations of Roger's theory for examining how an idea – such as contact with nature to enhance health and wellbeing – surfaces and diffuses within figurations of people over several generations. A full justification for using Elias's sociological theory and a comparison with traditional diffusion of innovation theory is given in Chapter 3.

A starting point for examining how an idea, underpinned by research evidence to a greater or lesser extent, finds its way into policy and practice is to examine the nomenclature relating to this field, a task that reveals varying terminology across many disciplines (Friedman & Farag, 1991). Ellis et al. (2005) argue that the diversity of terms (for example, diffusion, dissemination, knowledge transfer, uptake, utilization, adoption, and implementation) and their inconsistent use impedes understanding about the processes that influence the adoption of ideas. Nonetheless, it is the intention of this chapter to make sense of the research on diffusion by critically evaluating this broad field. What is central to all these terms (although often neglected through a process of reification) is the centrality of actors in the diffusion process.

Estabrooks et al. (2008) have undertaken, using bibliometric analysis from 1945 to 2004, a longitudinal study of the knowledge utilisation field. Their results show three domains of intellectual activity from the mid-1960s: innovation diffusion, technology transfer, and knowledge utilisation. From the mid-1980s onwards a further domain has been identified: evidence based medicine, from which somewhat

later, evidence based public health developed. Estabrooks et al. (2008) conclude that diffusion of innovation theory underpins knowledge utilisation research and that the work of Everett Rogers (1931-2004), has been and continues to be a dominating influence.

This chapter starts with a discussion of diffusion of innovation theory, a vast body of literature built on studies that, as noted above, do not generally take a long term view. The focus then moves on to diffusion of innovation studies within the health promotion 'tradition'. This is one of thirteen traditions of diffusion of innovation research identified by Greenhalgh, Robert, Bate, Macfarlane and Kyriakidou (2005). There are two further sections, the first of these relates to the use of ideas and research within the policy process, and the second relates to the evidence based policy and evidence based practice movements, that is to say, how an idea for which there is an evidence base is taken up in the policy and utilised by people in organisations. The term evidence informed practice is used in this thesis in preference to evidence based medicine. The term evidence based medicine is not used because it has a narrower and more specific meaning (Surender, Locock, Chambers, Dopson, & Gabbay, 2002) and contact with nature, as an idea, requires a broader frame of reference.

2.2 Diffusion of innovations research

In analyzing successive decades of diffusion research Rogers (1995) defines diffusion as "the process by which an innovation is communicated through certain channels over time among the members of a social system" (p.5). Although this definition is used extensively in the literature on diffusion studies, in taking an Eliasian perspective (see Chapter 3) this definition is problematic in several ways. The use of the words 'certain', 'members', and 'social system' imply that the diffusion of an innovation (in this case the diffusion of an idea), is specific, contained and operating within a particular group in society, and that the idea is communicated between people in an intentional and systematic way. Elias (2000) does use the term 'social system' but does so in the sense of a network of interdependent individuals (see Chapter 3, Section 3.2) in which the communication and, significantly, use of an idea is predominantly influenced through power differentials; that is to say, through a figuration. Further, Rogers use of the word 'process' to describe diffusion is

problematic because of the way the word is often associated with linearity, stages or steps, a course of action, a series or sequence and orderliness rather than anything haphazard or less than systematic. In addition, the definition cited above seems to suggest that the process is separate from the people in the social system rather than seeing the process as constituted by people's social interactions and actions. In later life Elias chose to use the word 'process' to describe his sociological theory in preference to the word 'figuration' principally because the word figuration began to be used in a static and reifying way in much the same way as 'social system' is used (Mennell, 1992). In this thesis the term figurational sociology is used because of the contemporary connotations associated with the word 'process' outlined above, that is to say, associated with linearity, stages or steps, a course of action, a series or sequence and orderliness.

Rogers applies the term 'diffusion' to both the planned and spontaneous spread of new ideas whereas others (Mowatt, Thompson, Grimshaw & Grant, 1998) distinguish diffusion from the term dissemination in which the latter is seen as "actively spreading a message to defined target groups" (p.669). In this thesis the term diffusion is used. To distinguish between diffusion and dissemination suggests a false dichotomy because people spread ideas across interconnected networks in intended and unintended ways, which are outside the control of any one individual or agency and which have planned and unplanned outcomes (Elias, 1978) (see Chapter 3, Section 3.2).

Very early work on diffusion of innovations can be traced back to Jean Gabriel Tarde (1843-1904), a French magistrate and Professor of Modern Philosophy in the College de France, who first observed and documented laws of imitation. Tarde (1903) argued that the take up of a new idea tends to follow an S-shaped curve over a period of time, that is to say, 'adoption' starts slowly then takes off and finally the rate of adoption slows down. One of Tarde's laws of imitation is that an innovation is more likely to be adopted if it is similar to ideas that have already been accepted. In other words, people are more likely to adopt the innovation if the social context is, to some degree, favourable. Tarde's work was, however, descriptive rather than explanatory.

Through reviewing the literature, Rogers (2003) notes that early diffusion research was dominated by this classical diffusion model and was limited to descriptive accounts of the S-shaped diffusion curve. He (2003) describes the model in the following way: the innovation originates from an expert source and is diffused to individual adopters; the adopter is seen as being relatively passive; the innovation may be rejected. Later there was a shift in attention away from the individual as the adopter of ideas to studies in which the so-called 'unit of adoption' was an organisation. Rogers (2003) claims that the early studies of organisational innovativeness were "oversimplifications in that the data were obtained from a single individual (usually the top executive in the organisation)" (p.407). Later studies progressed from establishing the innovative characteristics of organisations to investigating the diffusion process, particularly the sub-process of implementation, within organisations and then to the exploration of diffusion across complex organisations (Dearing, 2008).

Criticisms of diffusion research began to appear in the 1970s (Rogers, 2003). Greenhalgh et al. (2005) argue that early diffusion studies largely ignored the social and political 'causes' of particular behaviours and lifestyle choices that influenced the diffusion of innovations? Early exceptions to descriptive accounts are through social anthropological studies whereby researchers in this tradition have taken an in-depth, highly contextual and interpretive approach. For example, Wellin (1955) studied water boiling in a Peruvian town and Pelto (1973) investigated the introduction of the snowmobile amongst the Skolt Lapps of northern Finland. Another early, and specific exception, is from the medical sociology research tradition of diffusion studies. It was a landmark study in this area, the Columbia University drug study of the 1950s, which firmly established the role of interpersonal networks in the diffusion process (Coleman, Katz & Menzel, 1966). In this study the adoption of a new drug by physicians was observed. The researchers concluded that adoption of the drug could best be understood as a social process in which those doctors who had more extensive interpersonal networks adopted the innovation more rapidly, thus the experience of the early adopters influenced the adoption rate of the followers.

In 1971 Schön noted that theories about diffusion lagged behind the reality of emerging diffusion systems and criticised the classical diffusion model for taking a centralised and top-down approach in which an innovation originates from an expert and diffuses to others. Schön (1971) argued that this failed to explain decentralised diffusion systems in which innovations originate from numerous local sources and diffuse across horizontal networks. Subsequently, in reviewing the diffusion research, Rogers (2003) notes that diffusion systems vary on a continuum and in most cases are a "hybrid combination of certain elements of a centralized and decentralized system" (p.395), that is to say, a combination of top down and bottom up systems, but this in Eliasian term is an over simplification. One element Rogers describes is the "degree of centralisation in decision making and power" (p.396). Again, this conceptualisation is problematic if taking an Eliasian view, for power is never wholly centralised, decentralised, or fixed on a continuum somewhere between the two, rather the balance of power fluctuates at every interaction: the fluctuation being dependent on how the actors are configured at any one time (Elias, 1978). The emphasis on decision making also suggests a version of reality as rational, rather than emotional or having a blend of the two.

Based on his review of the literature Wolfe (1994) argues, that diffusion models that are generic and linear lack empirical validity as in reality diffusion is complex and context dependent. In describing the innovation 'journey' Van de Ven, Angle and Poole (1999) observe that "when innovation development work begins, the process does not unfold in a simple linear sequence of stages and sub-stages. Instead, it proliferates into complex bundles of innovation ideas and divergent paths of activities by different organizational units" (p.10).

In reviewing criticisms of diffusion research Roger's (2003) calls for an increase in understanding about the motivations behind innovation adoption decisions and adds that "such 'why' questions about adoption have seldom been probed effectively by diffusion researchers" (p.115). Similarly, Greenhalgh et al. (2005) also comment about the limits of the classic diffusion model to predict and explain how and why particular innovations are adopted. Both these views, however, suggest an over-reliance on rational explanations for the adoption of innovations: specific motivations that can predict adoption. Meyer (2004) argues that many diffusion

studies have relied on a dominant methodology comprising quantitative data obtained from adopters about a single innovation after widespread diffusion, the data collection for such studies invariably being by survey and at one point in the adoption phase only. Meyer (2004) observes that this is "a methodological approach that has become institutionalized in diffusion research" (p.60). This suggests that seeking to examine how and why the idea of using contact with nature to enhance health has diffused is a worthwhile aim and can contribute to what is currently known in this field, and furthermore, that alternative methodological approaches are needed.

Many diffusion studies are designed to identify the variables that determine the rate of adoption. One variable that has been identified as important by researchers is the perceived attributes of an innovation. Through his own research and through undertaking successive reviews of the empirical research over five decades, Rogers (2003) concludes that this variable, which is characterised by: i) relative advantage, ii) compatibility, iii) complexity, iv) trialability, and v) observability, explains "about half the variance in innovations' rates of adoption" (p222). A review by Wolfe (1994) of organizational innovation identifies six, not dissimilar, attributes that influence adoption including centrality to the day-to-day work of an organisation. However, what is not explored in either of these reviews is how people within networks are likely to differ in terms of the degree to which the attributes of an innovation are viewed depending on the purposes that they have in mind. Other influences on adoption that have been identified are fads and fashions amongst members of a social network (Abrahamson, 1991; Abrahamson, 1996), adoption in order to seek legitimacy and/or respectability (Westphal, Gulati & Shortell, 1997) and the presence of opinion leaders (Kautz & Larsen, 2000). All of these influences remain, however, largely under-theorised and thus lack explanatory power.

Greenhalgh et al. (2005) have undertaken a comprehensive systematic literature review of the diffusion of innovations in health service organisations. To do this they devised a new method, a meta-narrative review, to help them make sense of large data sets of diffusion research drawn from heterogeneous sources. The meta-narrative involved mapping the 'storyline' of the different diffusion research traditions over time and then tracing the influence of theoretical and empirical work

on subsequent research within a tradition. Key meta-narratives, 13 in total, were identified from the literature for example, rural sociology, health promotion, evidence based medicine, and organisational studies. Although researchers in different traditions investigated and explained diffusion of innovations differently Greenhalgh et al. (2005) produced a synthesis that embraced the many ambiguities and complexities of 'diffusion of innovations' in an organisational setting.

As a corollary to the synthesis Greenhalgh et al. (2005) produced a conceptual model for considering the spread and sustainability of innovations in health service organisations. The model is described by Greenhalgh et al. as a unifying process model based on an extensive analysis of 500 publications relating to diffusion of innovation primary research. The model has multiple features relating to the diffusion of innovation process. The process is set within the wider socio-political context and incorporates characteristics of the innovation; communication and other influences on the adoption of the innovation; user system antecedents, readiness, assimilation, implementation, and consequences.

However, Greenhalgh et al.'s (2005) generic and relatively linear model – which is not underpinned by an explicit theoretical model – is of limited use for exploring the more complex phenomenon of the diffusion of the idea of contact with nature to enhance health. This is because the diffusion of the idea across three or more generations including its appearance in research literature (knowledge creation), its transfer into policy, and adoption and use by people in organisations requires more than the application of a model for the spread and sustainability of innovations within health service organisations.

2.3 Diffusion in the health promotion tradition

Greenhalgh et al. (2005) describe studies that are based on health education and healthy lifestyle initiatives (and more latterly community development programmes that aim to address such things as health inequalities and obesogenic environments) as being within a 'health promotion' tradition of diffusion research. Prior to this Rogers (2003) identified nine major diffusion research traditions of which, according to Rogers's classification system, the tradition 'public health and medical sociology'

covers the area of health promotion, for example Acquired Immune Deficiency Syndrome prevention.

Reviewing the literature, it seems that more is known about the effectiveness of health promotion interventions than their diffusion. Kerner, Rimer and Emmons (2005) have commented that achieving widespread use of preventative interventions, including those with a sound evidence base, is an uncoordinated and unsystematic activity, but little research has sought to explain this phenomenon. Riley (2003) reports on a case study that reviews the first 10 years of heart health promotion in Canada. Her findings show that "dissemination of health promotion is a long-term, iterative process involving multiple stages" (p.15). Health promotion ideas and programmes vary in their complexity, with some being seemingly more straightforward than others. For example, the 5-a-day campaign adopted in the UK in 2003 under the Department of Health guidance following a World Health Organization (2003) initiative earlier in the same year, is a relatively simple government health message to eat five portions of fruit and vegetables a day. This guidance has been fairly successful in that people are generally aware of the message (Mosley, 2013), however only 27-34% of people over 24 years of age consume the recommended five portions of fruit and vegetables a day (DH, 2010). This illustrates that the diffusion of knowledge about a health promotion idea does not necessarily given rise to actions based on such knowledge. Other campaigns are more complex, for example the Change4Life campaign (DH, 2009), this involves multiple components relating to eating well and moving more, and is supported by an in depth social marketing strategy. Such programmes have specific goals relating to behaviour change, that is to say, the aim of the programme is to get people to adopt different lifestyles. In this regard they are different in many ways from a study of the diffusion of contact with nature to enhance health.

The examples given above relating to the adoption of preventative and therapeutic innovations are directed at the level of the individual and not at the level of an organisation. By comparison there is a paucity of studies that look at the adoption of preventative and therapeutic health promotion strategies at the organisational level. One such study has been undertaken by Goldman (1994), who surveyed 116 directors of the local branches of a voluntary health organisation, the March of

Dimes Foundation in the United States of America, to ascertain the perceived attributes of a Campaign for Healthier Babies five months after the campaign was launched. The results of the study showed that perceived simplicity of a new health promotion initiative was useful in predicting levels of implementation. It was concluded that the diffusion process is complex and that the characteristics of the environment, that is to say the context, into which the health promotion strategy is introduced, influences implementation. Again, however, the study lacked a theoretical basis that could explain this phenomenon.

The 2004 Wanless Report emphasised the need to address the health and economic burdens associated with health risk behaviours by devoting more attention to public health (rather than healthcare) interventions. The author of this report criticised the relative lack of evidence on the impact and cost effectiveness of public health interventions. The impact of a public health intervention or a health enhancing idea includes, in part, how far it has diffused or its 'reach'. Dearing (2008) claims that interventions must be high in reach but low in cost to most persuasively demonstrate worth in public health intervention. Further, Oldenburg, Sallis, Ffrench and Owen (1999) make the point that "the benefit of any public health intervention strategy is determined not only by its efficacy and effectiveness, but by the extent to which it is appropriately adopted and implemented …" (p.121). In 1999 Oldenburg et al. systematically audited all articles in 12 public health and health promotion journals in the year 1994. Less than 1% of the 1210 articles were categorised as diffusion research and only 5% as policy implementation research. Most of the published articles related to behaviour change in individuals and small groups rather than research into social, environmental, ecological, or policy approaches. From their study Oldenburg et al. recommended further research into the diffusion and institutionalisation of public health strategies and programmes which directly address social and environmental strategies to promote better health. Similarly, Johnson and Green (1996) have examined advances and gaps in the study of diffusion and adoption of preventative knowledge and associated health promotion practices by people in organisations and the public, and include the following in a list of priorities for research in this area: "Policy analysis of relations between societal trends … and dissemination/adoption of health information or practices" (p.S9).

In 2000, Sallis, Owen and Fotheringham used content analysis to examine four health promotion/disease prevention related journals (Annals of Behavioral Medicine, Health Psychology, Journal of Nutrition Education, and Tobacco Control) and found that the translation of research into action featured in less than 20% of articles. Later, in a review of articles about the dissemination and implementation (D&I) of research findings in public health practice, Brownson (2008) commented on the "paucity of high-quality D&I research in public health" (p.90); this comment is consistent with the findings of Oldenburg et al. (1999) nine years earlier.

However, in a chapter, on the diffusion of innovations, Oldenburg and Glanz (2008) have pointed out that in recent years the evidence base for diffusion in public health and health promotion has begun to grow. In reviewing the literature they observe the importance of context or setting to the diffusion process:

> It has become increasingly clear that factors influencing diffusion are not just static features of the innovation or of the adopters. Rather, there is usually a dynamic interaction among features of the innovation, intended adopters, and the context or setting where the process is occurring. (p.321)

Thus there are many variables in the diffusion process: people, their perceptions, and the interdependent figurations in which they operate.

2.4 The use of ideas and research within the policy process

There has been considerable discussion in recent years of how ideas, as well as research evidence, are used to shape policy and how policy, evidence or ideas might be implemented within organisations. Empirical evidence is information that has been gathered through observation and/or experimentation and then recorded and analysed systematically. Empirical evidence tends to be the output of research studies and appears in peer reviewed journals *predominantly* although not all articles within peer reviewed journals are research articles, most are but some articles take the form of editorials, commentaries, book reviews or are theoretically based. Empirical evidence can also be published in books, conference proceedings and grey literature. The latter is defined as "that which is produced on all levels of government, academics, business and industry in print and electronic formats, but which is not controlled by commercial publishers" (GreyNet, 1999).

The policy cycle is often portrayed as a process of stages beginning with agenda setting through decision making, policy formulation, implementation, feedback and evaluation (Hill & Hupe, 2002). The process can be based on the direct utilisation of research (although in reality this is seldom direct as research is interpreted in different ways), or conversely, to a greater or lesser degree, can be influenced by political ideology and other vested interests; in the latter situation evidence is of secondary consideration (Nutbeam & Boxall, 2008; Weiss 1995). Not only is evidence often ignored if it does not fit with the dominant ideological position of policy makers evidence is often interpreted in particular ways to justify a course of action (and inaction). Nutbeam (2003) has argued that evidence has a place in the policy making process if it is available, fits with policy direction and leads towards practical actions. This implies a somewhat rational process but a consistent conclusion from the literature is that neither policy making nor its enactment is a straightforward, rational matter (Walt, 1994; Buse, Mays & Walt, 2005).

In writing about the policy making process the linear and rational approach of thinking in 'stages' has been heavily criticized. This is especially the case with regard to so-called wicked problems. Wicked problems are policy problems that cannot easily be described and where there are no obvious solutions (Rittel & Webber, 1973). Lindblom (1959) describes the process as one in which policy makers 'muddle through'. Nakamura (1987) and later Jenkins-Smith (1991) criticise the staged approach for being too 'textbook' and unrealistic, as in actuality the stages are not discrete. Other critics, for example, Black (2001), argue that "the implicit assumption of a linear relation between research evidence and policy needs to be replaced with a more interactive model" (p.275). Similarly Chapman (2004) argues that the linear rational model is not appropriate for policy makers and advocates a 'whole systems' approach. Adopting a whole systems approach is concerned with "the big picture of issues across a range of different interests within complex organisational environments" and involves consideration of the dynamic nature of the links and relationships between organisations (DH, 2000, p.2), although no one person or team can possibly have such comprehensive insight as issues and interests differ and are in a constant state of flux. Whilst Hill and Hupe (2002) fully acknowledge the limitations of a staged framework they nevertheless point to its

usefulness in helping to conceptualise and study the policy process. Eliasian thinking takes a different stance in that linearity is not a helpful starting point as the policy process is unpredictable, dependent on many interdependent figurations and the outcome is not the planning of any one individual.

Parsons (1995) argues that the complexity involved in public policy analysis cannot be explained or captured by one theory or model because the problems, the context and the solutions are constantly changing. Simon (1957), an early theorist of policy analysis, proposed a 'bounded rationality' model of policy making. Bounded rationality is the idea that individuals as entities are only partially rational, and behaviour as well as decision making is influenced by a number of factors including emotions, prejudices and other subjective biases. To this Elias (1994) would add the term habitus to refer to a person's predisposition and/or their propensity to act in particular ways. Decision making within the framework of the bounded rationality model is by 'satisficing', a term coined by Simon (1956) to mean the making of a decision which is adequate in the face of unknown information. However, this still gives emphasis to rationality in the model. Other policy making models such as the incremental model (Lindblom, 1959) take bounded rationality as a starting point. Decision making within this model includes bargaining and negotiation, based on power differentials (Elias 1978), to arrive at feasible and supported decisions, consequently the decisions taken are often less radical as they are adjusted as they are implemented and ultimately produce outcomes that no one has planned (Elias, 1978). Thus policy sometimes is developed gradually (as well as in spurts) and takes account of existing policy and pragmatic considerations (Delaney, 1994). The incremental model corresponds to what really happens (an empirical framework) rather than how it ought to be (a normative framework) (Buse, Mays & Walt, 2005; Colebatch, 1998).

Another early model of policy making is the 'garbage can model' which is about the coincidental congruence between problems, solutions and choice opportunities (Cohen, March & Olsen, 1972). This model also contradicts the rational approach to decision making. Kingdon's (1995) agenda setting theory offers a relatively helpful framework, based on the 'garbage can model' to explain how issues are defined and appear on the political agenda. Kingdon (1995) takes a 'multiple streams' approach

namely problem recognition, the generation of policy proposals and the influence of political factors. Problems that are perceived as serious gain recognition more easily; this is possibly because people with power have more to lose if attention is not given to serious problems. Proposals to address a problem are more likely to be successful if they appeal to the public, are technically possible, financially viable, and align with the values of the decision maker. Kingdon (1995) has referred to the policy proposal stream as a 'policy primeval soup' in which ideas float around in a community of researchers, academics, planners and analysts before being adopted. The influencing political factors on the problems and proposals are such things as elected officials, opposition members and groups, the political climate, the mass media, and a collection of interest groups within all of which, to a greater or lesser degree, there are figurations of shifting power balances. Successful agenda setting, according to Kingdon (1995), is dependent on the streams converging in a timely manner thus a 'policy window' is said to have opened. Such models are helpful but underplay the active involvement of people and their motives as policy ideas do not merely 'float around' waiting to be adopted but are actively negotiated, manipulated, adjusted, and changed through figurations of interdependent people. The policy outcomes may be planned by no one (Elias, 1978) but there are plenty of people operating with forcible intent.

Public policy focuses on the public and its perceived problems (Dewey 1927). Milio (1987) argues that health problems have multiple origins and cannot be readily grouped into risk factors, diagnoses and symptoms to be addressed but require a vast array of what she refers to as healthy public policy, that is to say, a concern for health in all areas of policy (Ståhl et al., 2006). Stone (1989) has examined the early stages of agenda setting by focusing specifically on problem definition. Stone has analysed the transformation of difficulties into problems (a transformation dependent on people seeing the difficulty as amenable to human action), and concludes that "problem definition is a great tug of war between political actors asserting causal theories" (page 293). Stone is critical of the political world for searching for simple and intermediate causes of social problems for such things as poverty, malnutrition and disease. Stone maintains that the causes are complex and that such theories as the liberal causal theory, (the problem would not exist if the person changed their behaviour – an approach that is often applied in public health policy (Vallgårda,

2011)) or the conservative causal theory (the victim chooses the problem) are oversimplified and inadequate explanations of social problems. Similarly, Hunter (2007) observes that although government rhetoric about public health in policy terms is about "health determinants, health status and health systems rather than specific disease or conditions" (p.39), in reality policy formulation is reductionist, and problems are compartmentalised and viewed in a linear way.

Others acknowledge the contribution of grass roots activity on the policy making process itself. Head (2008) maintains that existing programmes and practitioner experience are valuable in informing policy making. Nutbeam and Boxall (2008) assert that evidence generated by case studies is valued by policy makers for offering practical solutions, that is to say, best practice local initiatives can provide a valuable evidence-base for influencing national policy (Sustainable Development Research Network [SDRN], 2008). Thus policy informs implementation and action, and action informs policy: the process is cyclical.

Policy implementation relates to how policies take shape on the ground. Hill and Hupe (2002) claim that implementation studies readily date back to the 1970s conversely Walt (1994) argues that policy implementation received little attention until the 1990s. Regardless of when the interest in this stage first appeared there is general agreement that the implementation part of the policy process, that is to say how the policy is interpreted and used by people within organisations, receives insufficient attention compared with the formulation stage. Walt (1994) argues that it shares similarities to the formulation stage in that it is a "complex, interactive process, in which implementers themselves may affect the way policy is executed and are active in formulating change and innovation" (p.177).

Sennett (2006) is critical of governments for abandoning policies once they exist, their implementation being secondary to their production. Nutbeam and Wise (2002) criticize those in public health for being more involved with knowledge acquisition than its adoption and implementation. In 2004, Wanless reported that despite decades of policy there appeared to be an overwhelming intransigence when it came to developing a more 'upstream' approach to public health. Bunton (1992), Walt (1994), Springett (1998), and Hogwood and Gunn (1997) document the way policy

intentions become diluted and reinterpreted as they are implemented. In Eliasian terms (see Chapter 4) this reflects the lengthening chains of interdependency (Elias, 2000), in that those who make policy are removed from those who implement policy and, at every point along the process, as more people are involved there is opportunity for further interpretation and deviation to suit different purposes and vested interests, such that the outcome is not what anyone planned.

In 1975 Hargrove wrote of the missing link (or 'black box' in more contemporary literature) between policy formulation and the evaluation of outcomes, the missing link being the implementation stage. Policy implementation theory has traditionally been divided into schools of thought, that is to say, the top-down approach which views implementation as a consequence of adherence to directives, the bottom-up perspective which claims that policy is interpreted by participants and there is involvement of people external to the organization (Colebatch, 1998), and the work of the synthesisers who blend both approaches. Lipsky (1997), a bottom-up theorist, describes one such mechanism whereby the decision making and established routines of public sector workers have substantial influence, that is to say, policy implementation is dependent on the people who actually implement it. Lipsky (1997) terms these workers the 'street-level bureaucrats'.

The policy context – both in terms of policy formulation and implementation – for examining the diffusion of the idea of contact with nature to enhance health has not been systematically explored. A policy content analysis can address such questions as: When does the idea emerge in contemporary policy? How and in what ways is the idea revealed in contemporary policy? How does this vary across the different government departments? And, what are the forms that this idea takes in the contemporary policy context? Answers to such questions illuminate the significance of the idea in public health policy, indicate the extent of references to the empirical research evidence base, and reveal any leading protagonists, and the involvement of organisations and interest groups.

2.5 The evidence based policy and evidence based practice movements

The diffusion of innovation literature has increasingly focussed on public policy innovations especially in the field of health (Nutley & Davies, 2000). The diffusion

of innovation literature is often a starting point for articles about evidence based policy and practice (Dopson & Fitzgerald, 2005; Nutley & Davies, 2000). The diffusion literature pertains to both the adoption of new ideas and to the utilisation of research findings (Rogers, 2003), as well as to the implementation of policy within organisations. But as Chapter 3 will show, diffusion of innovation theory is somewhat undeveloped and thus not adequate for studying an idea, with a long history, that is an inherent part of social development.

Evidence based policy making is not a new idea: Bulmer (1982) asserts that the association between social research and social policy was formed in the 19th and 20th Centuries. The relationship between research and policy has subsequently waxed and waned. Nutley, Davies & Walter (2002) argue that the 1980s and early 1990s were a low point due to the doctrine of 'conviction politics'. This term refers to the basing of political agendas and campaigns on the values and beliefs of politicians rather than on a consensus view or wider forms of knowledge relating to evidence.

In 1980, Weiss published a paper entitled *Knowledge Creep and Decision Accretion* in which she pointed out that policy is not often based on systematic research knowledge. About the same time Dunn (1980) and Webber (1983) documented ideas about the 'two communities metaphor' which describes the relationship between policy makers and academics in the social sciences and how they operated in substantially different cultures. This was a common theme in the literature at the time. Subsequently, however, others (for example Newman, 2014) have revisited this concept and describe it as inaccurate as in reality public servants have some commonality with academics. The trend has been for there to be less distance between the two communities. One reason for this is inclusion in the UK Research Excellence Framework of 'research impact', including how the research has influenced policy. In this respect figurations of researchers are becoming more interdependent with figurations of policy makers.

The election of the Labour Government in 1997 gave more emphasis to role of research in policy as evidenced in the document Modernising Government, "This Government expects more of policy makers. More new ideas, more willingness to question inherited ways of doing things, better use of evidence and research in policy

making and better focus on policies that will deliver long-term goals" (Cabinet Office, 1999, p.16).

Smith (2013) in discussing the translation of research on 'health inequalities' into UK policy between 1997 and 2010 has argued that "policy silos … work as filters to research-based ideas" (p.81) such that ideas which support existing ideologies are encouraged and those that do not are blocked or transformed. Smith identifies four key journey types: i) Successful Journeys, in which research based ideas travel into policy coherently, ii) Partial Journeys, whereby ideas influence policy explanations but not responses, iii) Re-contextualised Journeys, the way that ideas discussed in research vary substantially from the way they are applied in policy, and iv) Fractured Journeys, in which only elements of the idea appear to have travelled into policy. Although helpful in part the terminology tends to negate the role of people in the diffusion process and gives the impression that the idea diffuses over and above any interdependent figurations.

Nutley, Davies and Walter (2002) reviewed the lessons learnt about both evidence based policy and practice from an across-sector United Kingdom perspective. Their key conclusion was that "simple and unproblematic models of evidence based policy and practice – in which evidence is created by experts and drawn on as necessary by policy makers and practitioners – fail as either accurate descriptions or effective prescriptions" (p.2). Appearing in their report is a summary of the conditions that are more likely to lead to attention being paid to research findings (see Box 3.1).

Box 2.1 Evidence into policy (Nutley, Davies & Walter, 2002, p.17)

Attention is more likely to be paid to research findings when:

- The research is timely, the evidence is clear and relevant, and the methodology is relatively uncontested;
- The results support existing ideologies, are convenient and uncontentious to the powerful;
- Policy makers believe in evidence as an important counterbalance to expert opinion, and act accordingly;
- The research findings have strong advocates;
- Research users are partners in the generation of evidence;
- The results are robust in implementation;
- Implementation is reversible if need be.

Adapted and extended by Nutley, Davies & Walter (2002) from Finch, 1986; Rogers, 1995; Weiss, 1998.

This is a useful aid to thinking about why some research findings receive more interest than others, although still under theorised and thus lacking explanatory power. In this, as in much of the literature about evidence into policy and practice, the issue of strong evidence through the use of a robust methodology is a consideration. Accordingly, in the final conclusion of their report Nutley, Davies and Walter (2002) cite "agreement as to what counts as evidence in what circumstances" (p.2) as a key requirement if evidence is to have a greater impact on policy and practice. Kelly et al. (2010) have reviewed their experience of developing evidence based public health guidance whilst working at the National Institute for Health and Clinical Excellence (NICE). One of the key problems encountered was the length of the causal chain between interventions and outcomes; they conclude that a broad view of what constitutes evidence is required for public health including data and evidence from the social sciences. Much of the evidence relating to the idea of contact with nature to enhance health is from the social sciences and whilst this may be a barrier to the diffusion of the idea in the traditional health sector where methodological hierarchies prevail – the randomised clinical trial being the gold standard – this may not be a barrier across other disciplines and sectors.

Others have documented barriers to the uptake of evidence based interventions in practice. In a review of the topic, Glasgow and Emmons (2007) identified that barriers to the adoption of clinical preventative services or patient self-management

included the limitations of the research itself, the characteristics of the intervention, and the context of the target audience. Green, Ottoson, García, and Hiatt (2009) reviewed the science to practice gap in the public health sphere. They suggest that more practice based evidence is needed in order to implement more evidence based practice and that end users should be "considered early in the process of generating the research they may use" (p.168). Green et al. (2009) point out that for public health interventions psychological processes, cultural contexts and socioeconomic conditions are far more diverse and that context, adaptability and external validity, in terms of relevance and fit in practice, become significant. These comments point to the complexity of the diffusion process of evidence into action within public health; a process that is suggested is non-linear and influenced by many circumstances, that is to say, many complex figurations.

Thus, the way that public health and health promotion messages are actioned by people in organisations is complex and far from straight forward. The role of 'context' within the evidence based practice process appears to be particularly important. Having studied the introduction of evidence based practice in the National Health Service for over a decade Dobson and Fitzgerald (2005) suggest that an active view of context is appropriate:

> ... local contexts are multidimensional, multifaceted configurations of forces, some of which can be seen as external to the agency and some, more internal … context cannot be seen as a set of static and independent variables or an ordered series of hierarchical layers … but as a syndrome of forces, which interact in complex ways and lead to unintended outcomes. (p.185)

In this study the figurational sociology of Norbert Elias (see Chapter 4) will be applied to the diffusion of innovations. Dopson (2005) has applied Elias's theory to a case study which investigates the evidence based practice of clinicians and other professionals when treating children with glue ear. Dopson describes the context bound decision making, the professional hierarchies and complex social processes and concludes that despite the appeal of evidence based practice to policy makers it ignores the "asymmetrical interdependency networks that make up a complex organisation like the NHS" (p.1142). Such "complex webs of interdependencies" (Dopson, 2005, p.1126) can lead to outcomes that no one has planned or anticipated.

Elias (1978) asserts that such interdependencies are often played out at several different levels within an organisation and are based on power relationships. To date, much of the research that has explored the evidence based policy and practice movement in the health field has focused on the domain of acute secondary care. There has been less research that has explored, empirically, this subject from the domain of primary care (a notable example is Dopson & Fitzgerald, 2005). There has been minimal research of this nature in the domain of public health, and no research in the discipline which explores the diffusion process of a health promotion idea across three or more generations, through figurations of researchers, policy makers and into use through the actions of people in local organisations.

The work of Rogers and other diffusion of innovation scholars has been critiqued in this chapter, notably the literature located with the diffusion of innovation tradition of 'health promotion' and 'evidence based medicine' (Greenhalgh et al., 2005); these traditions are the ones most pertinent to the diffusion of the idea of contact with nature to enhance health. The critique centres on the under theorizing of the diffusion of innovation literature, the limited explanatory analysis of diffusion of innovation theory, and the inadequacy of the theory for the research question addressed in this thesis. In the next chapter the work of Norbert Elias is presented and a case is made for using his theory as a more adequate way to study the diffusion of the idea of contact with nature to enhance health.

Chapter 3: Using the theoretical perspective of Norbert Elias to understand the diffusion of the idea of contact with nature to enhance health

3.1 Introduction

The theoretical perspective of Norbert Elias (1897-1990) offers the potential of providing an explanatory framework for understanding the diffusion of ideas. In this chapter Elias's approach to sociology, its relevance to the diffusion of ideas, and, more specifically, the diffusion of the idea of contact with nature to enhance health, are set out. Elias's work, can assist in the study of how ideas transcend generations and diffuse through changing patterns of complex interdependencies. His figurational, more latterly termed 'processual', approach is a potentially useful way of analysing and understanding these developments. Elias's ideas have already been alluded to in relation to the conceptualization of the research problem presented in this thesis (Chapter 1) as well as in the critical review of the literature presented in Chapter 2. Chapter 3 explicates his theory in more detail, and applies and justifies its use in this thesis and in so doing considers the limitations of using this theoretical perspective for this research.

3.2 An overview of the work of Norbert Elias

Elias's major and early formative work is presented in a two volume book *The Civilizing Process* which was first published in German in 1939 (Elias, 1994). In this work Elias traces the civilizing of manners in European Court society from the late Middle Ages onwards. This case study was concerned with long term changes in conduct relating to everyday functions such as eating, washing, spitting, nose blowing, and eliminating, activities chosen by Elias because they are universal functions to all societies. The long term change in these everyday habits (for example, from eating with hands to eating with implements) is a record of the adoption and diffusion of ideas and actions. In other words Elias writes about and explains the transfer of ideas from one generation to another as well as horizontally across groups. Over the course of his lifetime Elias drew on his empirical research on the civilizing process to put forward and refine a theory of sociology. Writers such as Mennell (1992) have described the basis of his sociology as a radical move away from conventional sociology and Loyal and Quilley (2004) note that Elias

developed his ideas in a "singular manner with scant reference to the intellectual contributions of his contemporaries" (p.5). Thus Elias seldom compared his ideas to those of other sociologists even though it is generally accepted in the academic field that his thinking was influenced by a number of theorists (van Krieken, 1998). Elias developed an approach to sociology that is characterised by five interconnecting principles (van Krieken, 2001):

- Human societies can only be thought of in terms of long term processes of development;
- The outcome of the combination of human actions is most often unplanned and unintended;
- Individuals can only be understood in their interdependencies with each other as part of networks of social relations;
- Human social life should not be thought of in terms of states but rather relations;
- Sociology thought moves between a position of social and emotional involvement and detachment.

Each of these five principles will be considered in turn.

Elias's approach to sociology leaves no doubt that in his view contemporary social relations and structures can only be understood through looking at long term social processes. This view has had varying degrees of support in the development of sociological thinking. Until the Second World War the benefits of a historical approach to sociological analysis was evident to most sociologists (van Krieken, 1998). However in the 1970s it became popular to consign history to the background. This was described by Elias (1987a), as "the retreat of sociologists into the present" (p.223). Later, in the 1980s and 1990s, there was a revival of interest in the past and the presence of history in all sociological thinking (for example, Griffin, 1995) has been argued for. Mennell (1992) argues that there has been no general acceptance of Elias's stance that developmental explanations are the very essence of all sociological theorising. Elias's emphasis on the importance of taking a historical and developmental perspective is especially relevant to this thesis focusing as it does

on the diffusion of the idea of contact with nature to enhance health over time and space.

Through his work Elias makes it clear what is meant by 'long term'. He defines this as periods of not less than three generations (Elias, 1986). But in terms of how far to go back past this Elias (1983) states that "nothing is more fruitless when dealing with long-term social processes than to attempt to locate an absolute beginning" (p.232). He also warns of the dangers, in historical investigations, of researchers incorrectly using their own contemporary frame of reference as the basis for examining an earlier age (Elias, 2006). Elias's approach to sociology places 'processes' at the centre of his theory, that is to say, long term development and change rather than static states . For Elias (1987a) "present social conditions represent an instant of a continuous process which, coming from the past, moves on through present times towards a future as yet unknown" (p. xvi). In Elias's view social life changes so slowly that in order to develop an understanding of it a temporal dimension is essential. Thus sociologists who take an Eliasian perspective attempt to look at the process of a social change and development over time to gain a fuller understanding of its purpose in the present.

In his book *What is Sociology?* Elias (1978) explains his theory about the social order of life and its development. He writes that social processes are both structured and directional, that is to say, societies move towards being increasingly civilised. However, Elias differentiates social development from biological evolution, for he argues that the directional movement of a social process, unlike that of biological evolution, can be a reversible process. Thus, the process of social movement should be seen in terms of 'progressions' and 'regressions'. This is pertinent to understanding the diffusion of the idea of contact with nature given its long term development (illustrated more fully in Chapter 4).

Despite social processes being structured and directional Elias argues that society is not a product of rational goals and planning. Elias (1994) draws on his empirical research to demonstrate that the goals, plans and actions of individuals intertwine with those of others to produce unplanned outcomes and unintended consequences. As Mennell and Gouldbloom (1998) describe, the social fabric forms the substratum

from and into which individuals constantly spin and weave their purposes, but the fabric and the actual course of its historical change as a whole is intended and planned by no-one. For some commenters, however, Elias's empirical work overly emphasises the unplanned character of social change at the expense of giving some weight to the success of intentions and plans. Haferkamp (1987), and Chartier (1989), for example, are critical of his neglect of the organising interventions of powerful social groups. However, Elias's work together with that of Scotson (1994) on the established and outsiders, for example, goes some way to illustrating his understanding of how power ratios can shape the everyday pattern of human lives.

Elias's (1978) theoretical perspective on sociology emphasises long term social processes and continuity with regard to historical developments. Bourdieu and Wacquant (1992) have criticised his approach for focusing on long term trends, at times at the expense of missing or masking countertrends. However, there is evidence that Elias did write about countertrends in social processes, for example, Elias (1996) wrote about the rise of Nazism as a decivilizing process in his work about the Germans.

Elias's view that individuals can only be understood in their interdependencies with each other as part of networks of social relations was influenced by studying medicine in his early years as a student. In anatomy and physiology lessons his observations on the complex interconnections between tissue, muscle, and bone made a lasting impression. Mennell (1992) notes that Elias later applied the concept of 'complex interconnection' to the social world, sometimes referring to this as social 'tissue'. The idea of the complex interweaving of social interconnections was prominent in Elias's sociological work (Mennell (1992) such that in the 1960s Elias introduced the concept of 'figuration' to avoid the dichotomy between the 'individual' and 'society' (van Krieken, 1998). In Elias's (2000) words:

> The concept of the figuration has been introduced precisely because it expresses what we call "society" more clearly and unambiguously than the existing conceptual tools of sociology, as neither an abstraction of attributes of individuals existing without a society, nor a "system" or "totality" beyond individuals, but the network of interdependencies formed by individuals. It is certainly quite possible to speak of a social system formed of individuals. (p.482)

Elias is critical of models of society in which the individual is placed in the centre of a series of concentric circles that radiate outwards through social structures such as 'family', 'school', 'industry' and 'state' (see Figure 4.1). He referred to this tendency as reification, that is to say viewing an abstract idea as existing independently of people.

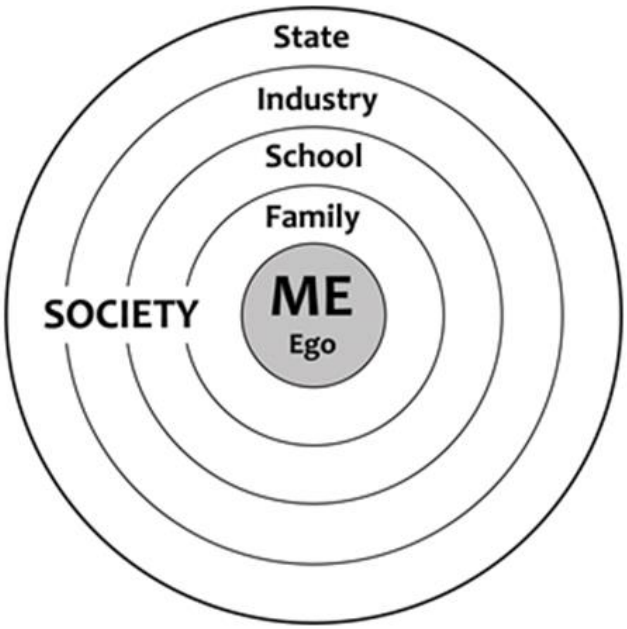


Figure 3.1 Basic pattern of the egocentric view of society (redrawn from Elias, 1978, p.14)

Elias (1978) maintains that such models encourage the impression that society is made up of structures external to oneself that are "above and beyond any people at all" (p.15). The impression is that the individual is "surrounded by society yet cut off from it by some invisible barrier" (Elias, 1978, p.15). A similar argument is presented in Chapter 4, Section 4.10 of this thesis with regard to public health models that are designed to show the determinants of health. Such models show the environment as "tacked on as a mediating layer of influence" (Rayner, 2009, p.589) thus the individual is surrounded by the environment "yet cut off from it by some invisible barrier" (Elias, 1978, p.15). In terms of the position of the individual in society Elias (1978) prefers to think of a web or figuration of interdependent individuals (see Figure 4.2) who are "linked with each other in the most diverse ways" (p.15). Thus Elias (1991) argues that social life should be seen in terms of dynamic social relationships and functions (and not states, objects or things) in which humans are *Homines aperti*, that is to say, open and mutually dependent rather than

Homo clausus in which they are seen as self-contained and separate from other people. One consequence of this is that people are constrained in their actions or enabled, depending on their position in the figuration and their relative power. Further, Elias (1991) uses the term *habitus*, a concept first published in sociological discourse by Mauss in 1935 (1979), used by Elias in 1939 (1994) and later re-worked by Bourdieu (1977). The concept refers to the way an individual differs from others; this difference is woven through interacting with other individuals in their figurations. Each person has characteristics that are shared with others but the total collective characteristics for any one individual are unique.

From the reading of Elias's (1978) work it is clear that for him 'power', a characteristic of all human relationships, is a central dimension of a figuration. He is particularly critical of power being viewed as a thing that is possessed by people, groups or institutions rather than as an ever changing balance or ratio of potency between individuals. Thus no one has absolute power or zero power for it is always a question of relative balance. As indicated above, it is these interdependencies of power that enable and constrain human actions. So, to take an example from the policy process literature, that is to say policy making and policy enactment, Lipsky (1969) argued that "policy implementation in the end comes down to the people who actually implement it" (p.45). Thus those at the 'street level' have a degree of power and discretion over how and when policy is applied.

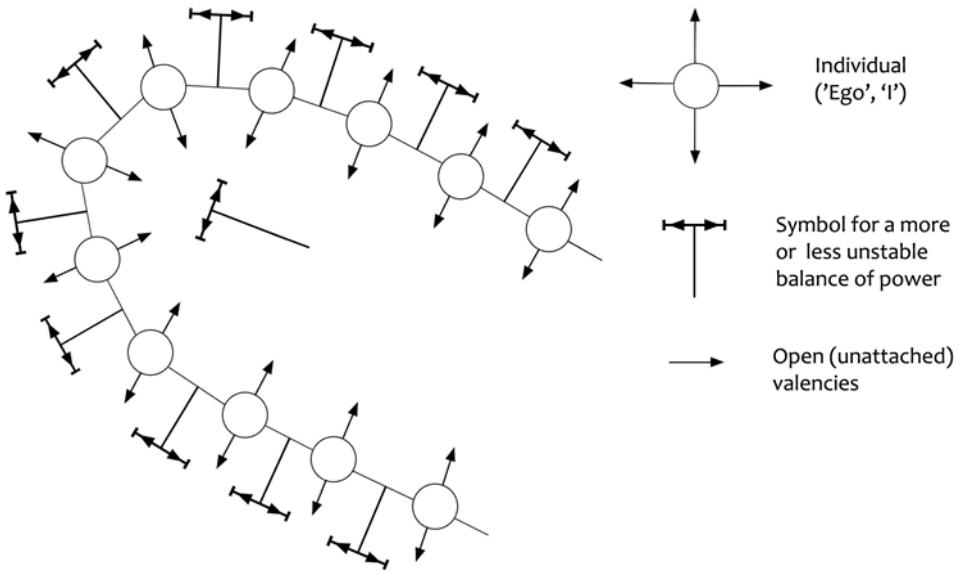


Figure 3.2 A figuration of interdependent individuals (redrawn from Elias, 1978, p.15).

Figure 3.2 shows individuals in a figuration with others. Their relationships are characterised by varying power balances. The individuals have potential for other relationships; hence the figuration is not static but dynamic. Furthermore, people are normally a part of more than one figuration increasing the complexity of social relationships to the point where patterns of actions are difficult to discern in everyday life.

Elias (1987b) also argues that sociological inquiry is located on a continuum between social and emotional involvement and detachment. He uses the terms involvement and detachment to avoid the mutually exclusive and absolute states suggested by the terms objective and subjective. Elias maintains that as sociological inquiry is about the study of other interdependent human beings then researchers are part of their object of scientific study and cannot be totally detached from it. Similarly, the knowledge generated through sociological inquiry is not independent of the social world but part of it (for further discussion see Section 5.1).

3.3 Using Elias's theoretical perspective to study the diffusion process

In this section the case will be made for using the theoretical perspective of Elias as a more adequate way to study diffusion over and above the stance traditionally taken by diffusion scholars. There is a tendency in traditional diffusion studies to take linearity as a starting point. Rogers does use the concept 'process' to describe the diffusion of innovations but within his framework the process starts with a fixed innovation, for example an object such as a new drug, a new technology, a new management technique, or a new piece of evidence for practice such as placing new born babies in a supine position to prevent sudden infant death syndrome, a health education campaign known as 'back to sleep' (Mitchell, 2007). The idea of contact with nature to enhance health is not a fixed idea; there is no clearly defined beginning or end (see Chapter 4).

Rogers (2003) writes extensively about the types of empirical studies that utilise diffusion of innovation theory and in doing so reveals some of the contributions and criticisms of the approach. For example, i) many studies do not reveal anything about diffusion over time except via respondents' recall data, ii) many of the innovations

studied are conceived as 'a type of communication message whose effects are relatively easy to isolate' (p.104), and iii) the unit of analysis is invariably the individual as systems of action are less accessible. This thesis addresses the diffusion of the idea of contact with nature to enhance health over time and through figurations of interdependent people and takes account of social, cultural and historical context and change. The diffusion of the idea is not isolated from its context since actors are viewed as the agents through which diffusion occurs. Therefore the study differs from a traditional Rogerian diffusion of innovation study in a number of respects. Table 3.1 compares and contrasts some of the main features of diffusion of innovation theory (2003) with an Eliasian approach to the diffusion of ideas.

Table 3.1 Comparing and contrasting the approaches to diffusion of Rogers (2003) with an Eliasian approach

A Rogerian approach	An Eliasian approach
• There are six conjectures of the diffusion of innovation model: i) the idea is discrete ii) the idea diffuses in a fixed social arena iii) the diffusion rate is a function of push and pull factors iv) the decision to adopt is dependent on available information and not sophisticated processes such as social learning v) diffusion travels through distinct phases vi) timescales are short and the diffusion history is unimportant (Rogers, 2003; Lyytinen & Damsgaard, 2001)	• There is a requirement to study the broader social, cultural and historical context as diffusion a not a free standing process
	• The idea of contact with nature is for some an everyday experience or habit and part of one's habitus and adoption is in part through social learning
	• An Eliasian approach can accommodate a many faceted idea
• The diffusion of innovation tradition draws on rational theories of organisational life	• The approach does not associate diffusion with distinct and measurable features
• The approach is reductionist and attempts to seek linearity and directs researches to stages	• Diffusion arenas are not fixed or homogenous
• Diffusion studies concern well defined innovations, for example, mobile phones or pesticide use	• Diffusion takes place across figurations of interdependent people

A Rogerian approach	An Eliasian approach
• The adoption population is relatively homogenous and has well defined boundaries	• The idea of contact with nature has an interpretive flexibility – its significance varies from one context and from one time point to another
• The approach is not useful for complex processes that have long histories	• The planning and outcome of the diffusion of an idea cannot be controlled
• The approach tends to reduce the diffusion process to static states	• The idea of contact with nature to enhance health is very complex and at the same time malleable in the respect that different actors can use it to further their own purposes
• Many studies are at the individual or organisational level and not across large figurations spatially and temporally	

Further, Krotz (2014) suggests that the tendency to reduce continual change and motions to stable static states as in diffusion of innovation theory as described by Rogers (2003) is not helpful for the diffusion of such processes as individualisation, modernisation and mediatisation as the theory is too narrow. Krotz (2014) terms such processes as meta-processes, that is to say, the long term processes of processes and describes them as open and broad processes the beginning and the results of which we do not know. Elias's own work explored the long term diffusion of manners and everyday habits; this was the vehicle with which he analysed the civilising process. Elias's work has also been applied successfully to investigate globalisation which is another long term process of processes (Krotz, 2014). For example, Bloyce (2004) has used Elias's theory within a case study to examine the globalisation (diffusion at a global level) of baseball.

With regard to the idea of contact with nature to enhance health the innovation is not stable over time but an idea which is viewed by people as having many facets. As Chapter 4 shows, it has appeared at different times, has had currency in a variety of domains and has been reframed by different groups. Evidently, the diffusion process relating to the idea of contact with nature to enhance health is much broader than the diffusion of a new product and requires in addition the relevant social and cultural

changes to be examined (this is done within each sub-study and drawn together in Chapter 9).

3.4 Norbert Elias on nature

Whilst Elias's theory has been chosen as a framework to understand the diffusion process of the idea of contact with nature to enhance health (because other diffusion theories are less adequate), Elias's work on nature which spans a long time frame within the 20th Century is also critically reflected upon and incorporated into this thesis. This is because Elias's (2006) own work on nature can contribute to an understanding of the diffusion of the idea of contact with nature to enhance health and the social development of the idea, that is to say, how the idea has been taken up by researchers, policy makers and used by people in organisations.

Elias's early writings on nature resonate with thinking nearly one hundred years later. Current thinking incorporates humans into nature as part of a dynamic ecosystem and whilst Elias (2006) does not use this terminology, he suggests that this is how earlier civilisations lived, that is to say, *in* nature and not seeing themselves as separate. Second and also importantly this section shows, through Elias's use of language about nature in the 1970s and 1980s, that Elias's (1978) theory of sociology *was of its time*. This does not mean to say that his theory is not relevant in the early part of the 21st Century, rather it illustrates how ideas about nature, the way nature was viewed, and the discourses about nature in the 1970s and 1980s are part of the diffusion of the idea and the form it took during specific periods. Further, in looking back to the ideas of earlier civilisations, in taking cognisance of views in the 1970s and 1980s, in thinking about the here and now, and the trends and countertrends, allows the lengthening chains of interdependency relating to the idea of contact with nature to be observed.

One of the earliest references Elias makes to nature is in an essay entitled 'On Seeing in Nature'. This essay appears in the chapter 'Early Writings' in volume one of *The Collected Works of Norbert Elias* (2006) and was written in the early 20th Century sometime before the 1930s. Elias spent time in his teenage years hiking in the Riesengebirge Mountains which now lie in the north of the Czech Republic and the south west of Poland, and he appears to draw strongly on these experiences in the

essay (Kilminster, editorial footnote, p.12). From these early writings there is evidence that contact with nature was important to Elias: he enjoyed being in natural environments, enjoyed the scenery and landscapes and took an interest in the detail of nature (Elias, 2006). It is possible that he was influenced by the German Wandervogel movement (see Chapter 4, Section 4.4) and that contact with nature was part of his habitus in the early 20th Century.

Elias writes of the pleasure of walking in the countryside and of the beauty of nature, and for the first time makes reference to the theoretical construct of *Homo clausus* (Kilminster, editorial footnote, p.7). Elias explains the construct using the idea of seeing in nature. He argues that only since the Renaissance age, "the age of awakening individuality" (p.7) have people viewed nature as landscape. Prior to this, earlier civilisations, the Ancient Greeks for example, "lived with nature in an intimate way" (p.9) such that nature and/or seeing in nature was an extension of the self and not a separate entity. The Ancient Greeks had no concept of landscape, no word to describe it and no works of art depicting a landscape (Elias, 2006). Thus Elias asserts that the way nature is viewed is tied to the way one views the self, to the world in general, and is closely connected to one's culture. At the time of Elias writing about these ideas, others (for example Dewey, 1929) were also questioning the 'traditional' separation of nature and experience.

Elias's work *On Seeing in Nature* in the early 1920s is ostensibly about how nature has been viewed, that is to say, from full immersion in Ancient Greece to increasing detachment and domination in modern History. The essay is also about learning to see as a naturalist, so for example, Elias differentiates between the city dweller and the experienced landscape onlooker. The first sees striking features of the landscape such as a waterfall or unusual rock formations whilst the trained eye of the latter comprehends the natural world in terms of "relationships which connect [the details] … into an ordered, unified whole" (p.14).

Later references to nature by Elias are somewhat different. Throughout his work Elias maintains that the aim of sociological analysis is to improve the capacity for collective control over human social relations. In *What is Sociology* Elias (1978) writes:

> The task of sociological research is to make these blind, uncontrolled processes more accessible to human understanding by explaining them, and to enable people to orientate themselves within the interwoven social web … and so better to control it. (p. 153)

In the same book he sets out some basic tenets of process sociology as a means of determining and measuring the stage of development a society has reached. Elias introduces these as the 'triad of basic controls'. These are: i) control over nature and natural events through technological developments, ii) control of people over each other through social organisation, and iii) individual self-control and restraint over drives and desires. Thus, at the time of his writing control over nature is central to Elias's theory of sociology.

Some of Elias's views about the subject of control over nature were revealed during an interview in 1984 with AaFke Steenhuis, editor of De Groene Amsterdammer, reported in the article *We Have Not Learnt to Control Nature and Ourselves Enough* (Elias, 1984). Selected excerpts from this article are provided in Box 4.1.

Box 3.1 Selected excerpts from the article *We Have Not Learnt to Control Nature and Ourselves Enough* (Elias, 1984)

AS: We in the West have shaped the world in our own image, we've established industry, trade, health care and education. We think that we've tamed nature, but isn't it now turning back on us? The air, the earth, the forests have been attacked, and now … in turn attacking us.

NE: No, what you call nature is a cold, wild, deserted chaos. The impression one gets from what you say is that nature is good; it's untamed.

AS: You've lived in Africa, I've travelled a lot in Latin America. Western culture tries to dominate and control everything…

NE: Have you ever really lived in the wild? Were things that much better? I really think quite differently about this: I believe that we haven't learnt to control nature and ourselves enough, we have to learn to do it better. The future certainly doesn't lead back to the wild, to primitive societies …

AS: Nature is the most important thing we have, it provides our food.

NE: The most important thing we have is what we make out of nature, not nature itself. Many people who say the word nature connect it with the feeling of a generous mother. You say it with that emphasis, as if it's something good! Completely wrong! Nature is something neither good nor bad, it's blind … I don't glorify nature. We

have grown out of nature through a natural evolution, that is, we are a piece of nature, nature is in us, we now have to assume the responsibility.

AS: Many people in Europe live in fear of a nuclear war. Earlier in the Middle Ages people were threatened by epidemics, the plague, cholera. Now we are threatened by something we have made ourselves. It seems as if we control the world, but in fact we don't have a grip on it.

NE: Precisely, precisely! We are driven by blind social processes, in which we are trapped in our own actions. Sociology has the task of finding the causes and explanations of those processes, so that we can learn to better control those blind social processes. We have to understand how those processes work, how something comes out of the web of actions which no one intended, so that we can better guide those processes. It's a matter of controlling the uncontrolled.

During the interview Elias comments that "we can't go back to nature, that's a dreadful idea, nature is wild, blind, angry, sometimes beautiful ..." (no page number) and that "life is now a lot better, with the increased control of nature" (no page number). Despite such descriptions about nature Elias claims also that nature is neutral, that is to say, neither good nor bad. Steenhuis's questions in the interview touch on ideas relating to sustainability. With the exception of the phrase "We have grown out of nature through a natural evolution, that is, we are a piece of nature, nature is in us, we now have to assume the responsibility" (no page number), Elias's responses show that he views nature as something to be subdued through taming and control. Thus from this interview it could be concluded that Elias has taken the stance that "human progress should be measured and evaluated in terms of the human domination of nature rather than through any attempt to transform the relationships between humans and nature" (Macnaghten & Urry, 1995, p. 205). He does not appear to express the view, at the time of the interview, that nature can afford *benefits* for people but does allude to the idea that humans can enjoy nature if it is controlled.

Between the 1920s and the 1970s/1980s Elias's views about nature and his relationship with nature appear to change. In his early years he writes of nature's beauty and gives the impression of gaining pleasure from contact with nature. He spends time hiking in the mountains, and he is inspired to write poetry about nature, and thinks deeply about nature in relation to the self. By the 1970s and 1980s his use of the word 'control' is evident and frequent not just in relation to nature but as a

cornerstone of sociological enquiry and purpose. Elias's early work fits with the account, provided in Chapter 4, of the early part of the 20th Century in which there was an increase in countryside recreation, a tendency to romanticise nature, and shared intuitive feelings about the benefits afforded by nature. His interview with Steenhuis in 1984 appears to mirror the account in Chapter 4 of the propensity during the 1970s and 1980s of people to see hazards and threats in nature related situations, and correspondingly to seek to dominate and control nature and the natural environment.

However, in a later essay *On Nature* first published in 1986 and possibly in response to the interview with Steenhuis, Elias's views on nature are further illuminated. In the essay Elias (2009a) clarifies and expands on the content of the interview with AaFke Steenhuis and makes his position on nature clear and, makes reference to nature's role in enhancing health.

Elias (2009a) points out that nature is both a source of "life and death, of illness as of health and joy" (p.60). He describes nature as a source of beauty and refreshment but is critical of those whose perception of nature is of a "cornucopia of good" (p.61) in which nature is always seen as kindly and humans as wicked. Elias accounts for this because of the human tendency to deify nature (especially historically) instead of seeing nature as totally indifferent to human beings.

In the essay Elias's main point is that humans "bear full responsibility and a duty of care" (p.65) for "nature disguised as the environment" (p.65). Humans, he claims, have made the rescue of nature necessary and only they can address this. This is a responsibility that is interwoven with the responsibility for the protection and welfare of humanity; nature being ultimately dependent on "the situation of humanity, and especially its power relationships" (p.65). In this regard Elias expresses a view of humans as interdependent with nature and vice versa and reveals ecological thinking, that is to say, the relationships between groups of living things and their environments (for further discussion of the term 'ecology' see Chapter 4).

Thus, to take Elias's interview with Steenhuis in isolation there is potential for misunderstanding about Elias's use of the word 'control' in relation to nature and

natural events. A misunderstanding that Jáuregui (1998) suggests van Krieken makes in his otherwise very clear and lucid book on the work of Elias (1998). Jáuregui (1998) points to van Krieken's interpretation as the "continuation of the Hobbesian split between nature and society, due to his constant stress on the socially acquired restraints which have to tame an uncivilized, aggressive nature" (para. 5). Jáuregui (1998) argues that there is no such dichotomy between nature and society in Elias's work; this is the view that is taken in this thesis. These ideas are returned to in Chapter 9, Section 9.3 following the empirical work of the case study.

To conclude, the theoretical perspective offered by Elias provides a framework for this thesis, that is to say, the long term processes of development, the unplanned and unintended outcomes of human actions, the interdependences of individuals, the relations of human social life, the movement of sociological thought between involvement and detachment, the concepts of *Homines aperti* and habitus, and his theorizing about nature and its relationship to health. All these underpin the analysis of the diffusion of the idea of contact with nature to enhance health following a systematic investigation within and across the interdependent figurations of researchers, policy makers and into use through the actions of people in local organisations.

Chapter 4: The visibility of the idea of contact with nature to enhance health

4.1 Introduction

The purpose of Chapter 4 is to chart the appearance of the idea of contact with nature to enhance health that is to say, where the idea has emerged over the last few centuries and the forms it has taken. The chapter serves as background and historical context for later empirical work within the diffusion case study. In particular it illustrates how the idea has diffused in diverse figurations over time.

As Elias (1983) argued, with ideas there is no clear beginning and attempting to locate one is fruitless. The historical perspective developed in this chapter is largely anchored in the 19th and 20th Centuries. However, the diffusion of ideas relating to contact with nature to enhance health during the 1970s onwards is given particular attention within the context of the emerging new public health movement. During this period ecological ideas and thinking seemed to gather momentum through the interweaving actions and processes traversing many diverse figurations, in particular those relating to both public health and the environment. An aspect of these historical developments was the shifts in meaning relating to the idea of contact with nature to enhance health. These shifts give some indication of the complexity of social processes and the difficulties associated with understanding changes of the long term. Nonetheless, particular patterns can be observed, which will be elaborated further in this chapter.

The process employed in writing this chapter was to locate material through systematic searching and then to screen the material, through perusal, for *explicit* references to the idea of contact with nature to enhance health alongside emerging trends relating to ecological ideas. In relation to the latter, broader patterns of social thought are referred to where relevant, such as 'the environment' generally, its place within the history of public health (for example, Petersen and Lupton, 1996), and, human ecology and public health (Hanlon (1969) is an example of early thinking, and Raynor and Lang (2012) provide a later and comprehensive account).

4.2 Ideas about contact with nature prior to the 19th Century

The premise that nature and the natural world enhance health and has a therapeutic value is well established in philosophy, art and popular culture from ancient Greece onwards (McLuhan, 1994). Mumford (1961) has argued that in the early 18th Century 'back to nature' was a theme of the Romantic Movement in response to the rationalism of the Enlightenment period and the rapid rise in urbanisation. Ruskin's (1819-1900) view was that the pollution caused by economic activities reflected an internal pollution and alienation from both God and nature (Day, 2005). Both poets and artists of the Romantic period idealised the natural landscape because nature was seen as pure and as a source of spiritual renewal (Landry, 2001). Such views and practices over the centuries are noted by Elias (2009a):

> The selective use of the word 'nature' as a symbol of wholesomeness and health, the aura of positive feeling surrounding it, have an almost paradigmatic significance that goes beyond the idealisation of nature itself. It tells us how human beings again and again seek remedies for their distress and suffering outside their world, how they long for the protection of an extra-human power against never-ending uncertainties. (p.61)

Elias is strongly critical of people who continue this stance in the latter half of the 20th Century; in his writings Elias (2009a) argues that nature, a source of illness and of health, is a blind process, that is to say, purposeless and indifferent to human beings and neither benevolent nor malign (these ideas were discussed in Chapter 3).

Some authors (Wilson, 1984; Heerwagen & Orians, 1993) have theorized the innateness of human affinity with nature based on the length of time, in evolutionary terms, humans have lived in rural environments; an innateness that, they state, affords benefits to health. Others (Thomas, 1983) claim that a historical perspective reveals a complex relationship between humans and the natural world. In examining the changing attitudes of humans to the natural world in England 1500-1800, Thomas charts the journey from human domination over other species to sentimentality about them. Rather than being due to an innate affinity for nature, Thomas suggests that

the change in attitude is related to increased economic independence from nature. Similarly, Elias (2009a) also writes of the domination over other species in that human beings have exterminated or subdued most of their enemies "to shape the major part of the earth according to their own needs" (p.59). These differing views illustrate a breadth of social thought and diverse ideas about the relationship between nature and people in terms of harms and threats as well as benefits.

4.3 The relevance of green space to town planning and public health

The growth of public health as a movement in 19th Century England was related to rapid industrialisation and the exodus of people from the country to live and work in towns and cities which, as a consequence, became overcrowded. For example, at the beginning of the 18th Century the population of Manchester was 10,000. In 1851 it was 400,000 and by 1901 the population had risen to 700,000 (Griffin, 2015). Such overcrowding meant that the conditions in cities were unhygienic. Rates of infectious diseases were very high such that by the mid-1800s they were responsible for a third of all deaths in England and Wales (Logan, 1950). The prevailing theory at the time was that infectious diseases were spread by poisoning from foul emanations, that is to say, bad odours from air, soil, and water; a theory known as the miasma theory (Susser & Susser, 1996). The thinking that infectious disease was caused by bad odours eventually gave way to the germ theory of disease (Susser & Susser, 1996) in which small organisms invaded living hosts such as humans and animals.

Duhl and Sanchez (1999) note that in response to the unpleasant living conditions of the Victorian age (1837-1901) and for a few decades beyond, much of public health became centred on town planning and engineering especially the installation of sanitation systems. Thus the environment, including people's detachment from a rural environment, was a central theme of early public health. The stench and filth of the slum areas of such cities as London and Manchester were associated with frequent epidemics of infectious disease, illness, and fear; spaces/places of such areas were viewed as contaminating as were the human inhabitants (Petersen and Lupton, 1996). Contagion is an example in which nature is 'red in tooth and claw', a metaphor Elias (2009a) borrows from Tennyson (1849) to emphasise that nature, in

part, is full of dangers and humans can and do choose to overlook this point (see Section 3.3 for a fuller discussion).

Alongside the focus of those working in public health and beyond on the control of infectious disease epidemics there was another narrative: open spaces. In 1833, just prior to Victoria's reign, the modern urban parks movement was established following recommendations made by the Select Committee on Public Walks. The recommendations included the provision of public parks for fresh air, greenery, contact with nature, health benefits and to contribute to moral health through contact with the educated middle classes (Ward Thompson, 1998; MacMaster, 1990; CABE Space, 2005). Rudlin and Falk (1999) argue that parks also provided an antidote to the isolation of the working classes from the recreational benefits of the countryside although this assumes that people were in a position to access and use the parks, many perhaps being too tired or too ill.

Other Government reports in the mid-19th Century make reference to the importance of open green spaces and their role in what was referred to as healthful recreation. For example, there are references in Chadwick's (1842) *Report on the Sanitary Condition of the Labouring Population and on the Means of its Improvement* about the importance of open green spaces and their role in healthful recreation as the following excerpt from Chadwick's Report shows:

> … it will probably be found, under the circumstances of the increasing population of the towns, and the increasing necessity of keeping open spaces within and around the towns, and of exercising a general control for the beneficial arrangement of new buildings for the public health and convenience, and of securing convenient public walks and places of temperate and healthful recreation for the population – that it is most desirable for all these objects that means should be taken to … obtain as early as practicable, and on the terms of proper compensation, lands within and in the immediate vicinity of towns for public use. (Chadwick, p.51)

Hamlin & Sheard (1998) argue that the motive behind this report was an economic one driven by the need to reduce spending on illness and disease. The report alone was insufficient to initiate Government ministers to act. In 1844, in Exeter, the Health of Towns Association was established which lead to branches being formed in other cities including Manchester. Through local and national branch activity members of this association, and other associations and societies, campaigned

vociferously for improved sanitation, clean water and a medical officer for each town. They also used their political contacts to influence, negotiate and apply pressure. This social movement contributed to the passing of the Public Health Act 1848 (Ashton & Ubido, 1991). This account belies the complexity surrounding the lead up to and the aftermath of the Act being passed. Fee and Brown (2005) describe the failed attempts, the vested interests of the opponents of the Act and the confusion about setting up the infrastructure for its implementation.

Thus the focus within public health during this period was predominantly on the physical and microbiological environment as a consequence of the health patterns at the time. Narratives pertaining to contact with nature within public health were related to the planning of towns and the building of model villages; the latter being a trend in the 19th Century. For example in 1853, eleven years after Chadwick's 1842 report, Titus Salt built Saltaire, a worker's village in West Yorkshire. This village included open spaces such as a park and allotments specifically for the health and wellbeing of the mill workers. Similar villages at Port Sunlight and Bourneville were also created for workers by other philanthropists namely William Hesketh Lever and George Cadbury respectively (Hertfordshire Library Service, 1989). However, such villages were the exception as by the 1900s many Britons lived in cities of greater than 100,000 residents and slums were prevalent (Ponting, 2007). Nonetheless, these 19th Century philanthropists' ideas and actions reflect a continuing concern with providing a supportive living and working environment for workers and their families, of which providing opportunities for contact with nature was a part.

In 1875 Octavia Hill, a social reformer who championed innovations in housing, provision of open space, and access to common lands and the countryside wrote about the 'healing gift of space' and noted:

> There is a small, square, green churchyard in Drury Lane, and even the sight of its fresh bright verdure through the railings is a blessing; but if the gates could be opened on a hot summer evening, and seats placed there for the people, I am sure the dwellers about Drury Lane would be all the better for it. (Hill, 1933, p.201)

In 1876 Octavia supported her sister Miranda Hill in founding the Society for the Diffusion of Beauty (the precursor to the Kyrle Society which was one of a growing number of civic groups (Hewitt, 2014)) the aim of which was to "bring the refining and cheering influences of natural and artistic beauty home to the people" (Hill, 1933, p.17) and later, in 1895, Octavia Hill co-founded the National Trust.

In 1876 Benjamin Richardson, a notable physician and sanitation scientist, proposed, in an address dedicated to Edwin Chadwick, an imaginary city of health called Hygeia as a model for new and existing cities. Richardson (1986) provided an extremely detailed account of the city which was designed to have a strict salutary regime with the aim of reducing mortality rates and increasing life expectancy. In the imaginary city all the houses have gardens so that children have flowers and green sward in place of the gutter. The public buildings such as churches and hospitals have garden space surrounding them and the streets are tree lined and adorned with shrubs and evergreens. The roofs of every house are accessible as an outdoor area and are areas for the cultivation of flowers. Between the houses are garden squares these are well maintained with trees and flowers for the enjoyment of the young and old. The rationale offered for this model city was salutogenesis, that is to say, health maximisation and enhanced quality of life above any aesthetic considerations of city planning. At this time, these ideas were based not on scientific evidence but rather on the somewhat taken for granted assumptions about the benefits of green space that were diffusing across many figurations.

By the end of the 19th Century Ebenezer Howard was planning a Garden City concept, another imaginary city. By creating a healthy, natural and economic combination of town and country life, on paper at least, Howard (1902) aimed to address the 'closing out of nature' by towns. He proposed that cities should be surrounded by a belt of green countryside as well as having green spaces within the city. This was translated into reality through the building of Letchworth Garden City which started in 1903 and later Welwyn Garden City in 1919. Howard's work was influenced by socialist ideologies and the utopian vision of Edward Bellamy and his science fictional publication *Looking Backward 2000-1887* (Bellamy, 1888). Howard's work influenced the subsequent formation of the Town and Country Planning Association in 1941 and the modern planning movement (Canniffe, 2011).

In the latter half of the 19th Century onwards town planning had a central narrative relating to contact with nature; thus ideas about contact with nature were not confined to public health. Such developments are indicators of social thought in particular figurations, for example, of philanthropists at that time and although not framed as 'the wider determinants of health' these ideas have much in common with contemporary notions related to these debates.

The narratives and actions of philanthropists about town planning and contact with nature can be considered to be a pattern or trend, to use an Eliasian word. The development of a countertrend is seen in 1961 when Howard's Garden City concept was excoriated by Jacobs in the work *The Death and Life of Great American Cities,* in which she mounted an attack on orthodox urbanism and rationalist planners of the 1950s and 1960s. Jacobs (1961) was critical of planners and their neglect of complex, organic and dynamic human life in the planning process. She warned against having parks for the sake of parks, about their potential for decline and argued for more thought into their design from a social perspective, that is to say, with the needs of people in mind. Jacobs work is now studied by successive cohorts of students studying such subjects as landscape architecture and urban planning through the delivery of university curricula.

Thus, during the 19th Century and 20th Century there was a widespread belief diffusing through many, diverse networks, that open spaces such as parks, gardens and allotments improved the health and wellbeing of urban residents. Clark and Jauhiainen (2006) argue that such areas were seen as essential 'breathing spaces' in increasingly 'pathological' built environments and also as a means of educating and disciplining the new urban masses into a world of respectable cultural values; these are all examples of the different purposes the idea was used for. Turner (1996) has argued that this belief influenced the establishment of open space provision standards in the 1920s, illustrating that the broader social context was receptive to such ideas at the time. By 1934 the term 'green space' was commonly being used in town planning in Britain and on the continent (Clark & Jauhiainen, 2006). Figure 4.1 shows the types of planned and natural green spaces in four northern European cities from 1850-1990. Between 1850 and 1890 green space in cities was of both types,

that is to say, natural and planned green space. Green space introduced between 1890 and 1970 was planned and predominantly in the form of parks and gardens. Latterly, post-1970, green space introduced in the four cities of London, Stockholm, Helsinki and St. Petersburg is of a more natural type in the form of forest parks, national urban parks, city farms and marinas. Thus green space of varying forms has continued to be a feature of urban environments.

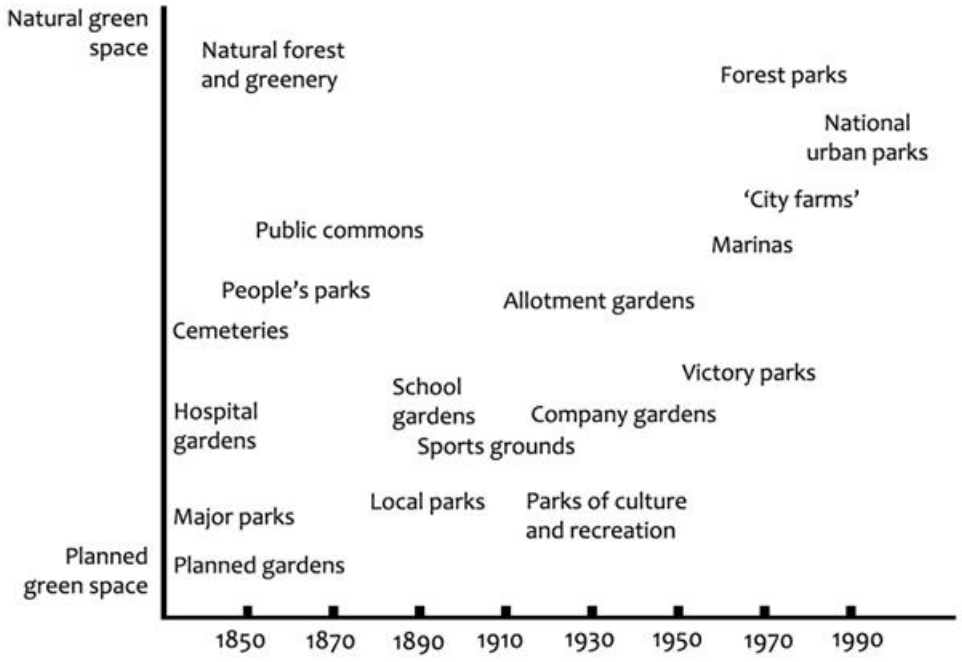


Figure 4.1 Preliminary typology of green spaces in London, Stockholm, Helsinki, and St. Petersburg (redrawn from Clark & Jauhiainen, 2006, p.23)

4.4 Escape to the countryside and the Outdoor Movement

As social reformers from the mid-1800s onwards worked to develop pleasant surroundings in towns (Dubos, 2001) there appeared, at the same time, amongst many figurations within the urban population a strong idealization of the natural environment and the desire on the part of many people to return to a rural idyll for both fresh air and spiritual enrichment (Marsh, 1982; Weiner, 1985). Hence, it can be seen that there was a general belief, amongst different sectors of society in Victorian England, that contact with nature was beneficial not only to wellbeing but also to the soul. The symbol of nature as a protective extra-human power is expounded upon by Elias (2009a) who writes of this use of nature in this way, by many figurations of people, past and present:

> The selective use of the word 'nature' as a symbol of wholesomeness and health, the aura of positive feeling surrounding it, have an almost paradigmatic significance that goes beyond the idealisation of nature itself. It tells us how human beings again and again seek remedies for their distress and suffering outside their world… (p.61)

The need to escape the industrialised towns and cities for fresh/pure air due to beliefs about the dangers of bad air was achieved by accessing public rights of way, that is to say, footpaths that led out of the towns and cities "through meadows and cornfields and parks of the immediate neighbourhood" (Prentice, 1851, p. 289). The benefits of using established rights of way for city dwellers are documented by Adams (1990):

> It was of immense benefit to those who passed their time in a crowded manufactory, to be able to enjoy fresh air by the side of the river. On the Sabbath evenings it was customary for them to take this walk with their wives and families, thus spending a portion of this day of rest in an innocent and healthful manner. (p.23)

In the 1900s fever hospitals and psychiatric hospitals were built on the edge of, or outside, towns and cities. The asylums for the mentally ill were seen as providing 'moral therapy' which involved placing the patient in a carefully designed environment away from the physical and social circumstances that were believed to be causing the illness; the landscape formed part of the therapeutic regimen (Hickman, 2006). Isaac Ray (1846), an observer of psychiatric hospitals in Britain, France and Germany in the mid-1800s commented that:

> Many of them are placed on eminences which command an extensive view of the adjacent country, the field of vision embracing hill, and valley, wood and water, in their most agreeable combinations: while fields of grass and tillage, divided by hedges and trees, grazing herds, cottages and country seats, form the nearer features of the landscape reposing in the softened light of an English sun. (p.309)

Within the extensive grounds of the asylums there were features designed to support a therapeutic regime that included exercise and outdoor work, for example, airing courts (walled areas for taking the air), wider pleasure gardens, sports grounds, fields

and an estate farm (Hickman, 2006). Thus the grounds were designed to enable contact with nature as an inherent part of daily activity. Through documenting the development of the Devon County Asylum, to which the first patients were admitted in 1845, Brizendine (1992) noted that much of the writing about insanity covered asylum design as few other approaches to treatment were available at the time. This illustrates how ideas relating to treatment were shaped by beliefs about the therapeutic value of green space in part because there were few competing alternatives.

Ideas about nature during and after the Romantic Movement of the 19th Century are interwoven with the emergence of the Outdoor Movement. The beauty and sublimity of nature in art and poetry was celebrated across Europe; this formed part of the context for the appearance of the Outdoor Movement. Taylor (1997) argues that this was a largely British phenomenon in which people pursued healthy open-air activities and joined voluntary associations, footpath protection societies and clubs to further access the countryside, thus health and environmental interests were interwoven in these early developments. Ideas, however, are never totally confined to figurations of one nationality; there were some signs of similar movements beyond Britain thus showing the wider diffusion of these early precursor ideas.

Taylor (1997) has shown, through a comprehensive historical analysis that increasingly people of all classes, not just the upper and middle classes, engaged in activities which brought them closer to the natural environment. He argues that the expansive early stages of the movement paralleled the process of urbanisation through industrialisation. He draws attention to the social and political significance of the phenomenon which was played out through disputes over access rights and associated campaigns. Most notable of these was the mass trespass of Kinder Scout on 24 April 1932 led, amongst others, by Benny Rothman a conservation activist and young communist. The organised trespass was not only about the 'right to roam' across open countryside but was also the embodiment of working class struggles against the landed gentry (Renton, 2015). In this particular example, the natural environment might be seen as being used in a symbolic way, shifting the balance of power during the mass trespass. The activists who were struggling for the 'right to roam' across land owned by another did not choose to demonstrate on the streets of

Manchester but chose the natural terrain that was the subject of the struggle. Thus the trespass, the physical appropriation of another's space, contributed to a fluctuation in the power balance.

For economic reasons relating to increased productivity, shorter weekly working hours and paid holidays for the workers were introduced by some industrialists thus their employees had more time and money for leisure pursuits (Walker, 1985). Walker (1985) suggests that the Outdoor Movement was a vehicle of both the state and society in that the rise in outdoor recreational activity in the form of walking, cycling and climbing was both a consequence of the drive for increased industrial efficiency and a response to the prevailing squalid and cramped living conditions within cities.

The rise in popularity of outdoor pursuits contributed to the founding of various holiday associations, fellowships, clubs and youth groups. The Co-operative Holidays Association was founded in 1893 to provide holidays in the countryside for working class people for physical, moral and cultural development (Snape, 2004). In 1901 the Wandervogel movement was established in Germany. This 'back to nature' youth group engaged in hiking and adventure tours but, along with Scouting and most other youth groups that were independent of Hitler Youth, was eventually outlawed in 1933 (Laqueur, 1984). In 1909 two Germans, Wilhelm Münker, a conservationist and Richard Schirrmann, a school teacher started the youth hostelling movement which spread to Britain 20 years later. The aims of the Youth Hostel Association (YHA) in its early days included: i) health of body and mind, ii) increased enjoyment of the countryside, and iii) preservation of the countryside (Maurice-Jones & Porter, 2008), thereby demonstrating the convergence of health and environmental thinking. The aims are captured in the words of a former Vice President of the YHA, William Temple, Archbishop of York:

> It is by the natural exercise of the body among and against the scenes of Nature that the mind becomes justly appreciative of those scenes. And to recover a sense of beauty of Nature is to recover sanity and peace. Consequently the Youth Hostels, which arise out of and then facilitate the new and ancient, but most emphatically not 'modern', eagerness for walking, are something more than an aid to jolly holidays. They are that also; but they are a great contribution to our social and spiritual welfare.

> The problems of the hectic civilisation may yet be solved by the walkers …
> (Youth Hostel Association Handbook, 1934, p.4)

Thus nature appreciation was central to many of the organised groups alongside health and happiness. Taylor (1997) notes the strong bond between outdoor exercise and natural history and dates this "from the latter part of the eighteenth century, when the Romantics drew their inspiration from rambles in the country and botanists roamed considerable distances in search of specimens" (p.91). This is an example of continuity alongside change through the interweaving of many processes across broad and diverse historically produced and reproduced figurations.

Historically there was a general and intuitive belief that contact with nature afforded many benefits to health in its broadest sense. The idea of contact with nature – although not framed in this specific way – was used as a way to promote and enhance health as well as for situations requiring rehabilitation and recuperation. Wellbeing, if not health, appears to have been broadly defined during the early to mid-20th Century to include a spiritual, moral, aesthetic and social dimension in addition to a physical one. There was extensive expansion of organised activities in the 'great outdoors' which provided all classes with opportunities to take exercise and at the same time appreciate the benefits of nature. The idea was not, however, apolitical: the expansion of the outdoor movement was related to the broader social, economic and political context in that the ideas were circulating in various figurations, taken up and interpreted and used for a variety of purposes that reflect the broader socioeconomic and political landscape of the time.

4.5 The rise of the medical paradigm

In the years between the first and second world war the environmental focus within public health policy, notably in connection with sanitation and its importance, began to decline (Ashton & Ubido, 1991) and the sanitation era (1875-1930) was superseded by the arrival of the germ theory of disease and a focus on bacteriology (Orme, Powell, Taylor & Grey, 2007). From the 1940s onwards health policy was dominated by individual and medical health issues such as the development of immunization programmes, treatment regimens and the provision of hospital and clinic services, for example maternal and child welfare (Ashton & Ubido, 1991), these developments coincided with the development of the National Health Service.

Thus a biomedical model of health, including preventative services, became predominant, that is to say, the body was viewed as a complex biomedical system with illness understood in terms of disease theory and treatment. In 1946 the World Health Organisation (WHO) formalised a definition of health which emphasised "… physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1948, p.100) which focussed attention on wellbeing, health enhancement, and a more holistic view of health rather than defining health through a deficit approach. Despite this the National Health Service was and remains predominantly about health care and the treatment of sickness; a function that has been consistent through many figurations over its almost 67 year history.

Macintyre and Ellaway (2000) note that during the period from the end of the Second World War to the 1970s there was a dearth of studies relating to the impact of the local social or physical environment on human health by epidemiologists. This was the era in which epidemiology – as a core discipline within public health – expanded and became increasingly preoccupied with a focus on individual risk factors for disease (Thurston, 2014). Hume Hall (1990) argues that health policy makers showed little interest in environmental issues prior to the mid to late 20th Century. At the same time environmental policies rarely prioritised health (WHO, 1992). During this time, the predominant interest in the environment from within public health appears to have been through the specialist field of 'environmental health'. Environmental health work was, and continues to be, separate from health care and the NHS. It is concerned with inspection activities relating to sanitation, clean air, housing, accident prevention, and meat and food hygiene under the auspices of local authorities (Chartered Institute of Environmental Health, 2007). The environment became seen as something to be carefully measured and controlled and the focus was on reducing people's exposure to hazards in the environment. Thus, it is clear that over this period of time, the health benefits of contact with nature and the natural environment were displaced and obscured by an increasing emphasis on medical treatment. Further, amongst the medical professions there was increasing specialisation throughout this period which tended to increase the number of figurations which were not necessarily integrated.

The domination of health care and health policy by medical professionals, including the increase in technology and pharmaceuticals that tended to accelerate the medicalization of everyday life (Thurston, 2014), continued until the 1960s when, as Walt and Gilson (1994) argue, the medical paradigm was increasingly challenged from a variety of groups. Duhl (1963) wrote of the need to replace biomedical models of health solutions with "more sophisticated perceptions of the interplay between man and his environment" (p.1). In the same vein, Dubos (1964) warned that medicine would be led into a blind alley by exclusive emphasis on a reductionist approach that focuses on physiological explanations of disease. Hanlon (1969) argued that for public health to be meaningful the profession should cease concerning itself with sickness alone. In expounding an ecological view of public health, that is to say, the view that no single factor can explain disease and ill health, Hanlon (1969) suggests that humans have opted to be estranged from the environment. He notes some of the many ways in which the "antagonistic attitude of our culture toward its environment" (p.9) is revealed (emphasis in original):

> We *conquer* the environment. We *subdue* nature. We *push back* the frontier. We view it as a *threat*, as an *enemy*, instead of cherishing, protecting and conserving it, instead of recognizing that we are part of it. (p.9)

The work of Duhl (1963), Dubos (1964), and Hanlon (1969) are examples of social thought about the wider determinants of health including, as cited here, commentary about the environment. This pattern of social thought is the context within which emerging ideas about contact with nature, including that of Elias, are seen. For example, Elias (1984) uses, in his interview with Steenhuis (see Section 3.4), the phrase 'We have grown out of nature … we are a piece of nature, nature is in us, we now have to assume the responsibility" (no page number). This is an idea that is part of the emerging discourse, around ecological concepts, which sees human beings as interdependent with the environment.

Such ideas were surfacing in many figurations and across many fields, for example, within the decade of the 1970s, Bronfenbrenner (1974, 1976, 1977, 1979) was undertaking work on human development (a close 'ally' of health). This early work raised awareness of the study of human development in real life everyday settings,

that is to say, out of the laboratory, where hitherto much of the work on human development had taken place. Bronfenbrenner (1986) argues that this was an idea "whose time had come" (p.287) meaning that there were sufficient figurations of protagonists about ecological concepts for his ideas to be appreciated and taken up. In his work on an Ecological Systems Theory, Bronfenbrenner drew attention to the environmental and societal influences on child development. Bronfenbrenner's ecological system comprises five nested subsystems across different spatial levels through which child development can be analysed. The structure from a figurational perspective creates false dichotomies in that such models, Elias (1978) argues, encourage the impression that society is made up of structures external to oneself that are "above and beyond any people at all" (p.15).

Bronfenbrenner's work continues to be influential and contributed to the spread of ecological concepts within social psychology. However, nature and/or the natural environment or greenspace did not receive any specific attention in his work as the focus of his work is the social environment (see Section 4.11 for a further discussion on the use of the term ecology/ecological in the discipline of public health). However, what this does illustrate is that ecological ideas were circulating within a diverse number of fields and being used for a variety of purposes at the same time as the emerging predominance of the medical paradigm of health.

Increasingly, the limits to medicine began to be realized. In his book *Limits to Medicine*, Illich (1976) argued that "until recently medicine attempted to enhance what occurs in nature" (p.47). Illich was particularly critical of the 'the expropriation of health' by professionals; he pointed out that there was no 'magic bullet', that is to say, no 'pill for every ill' and that medicinal treatments sometimes have unintended (iatrogenic) consequences. Thus the limits of medicine were questioned.

In the same year as Illich published his book, McKeown (1976) argued, largely from his previous work on analysing mortality rates in England and Wales from 1840 to 1970, that health was primarily determined by broad social and economic changes such as family size, increase in food supplies and a healthier physical environment above specific medical preventative and therapeutic measures. Although McKeown's work was subsequently heavily criticised (Colgrove, 2002) it has been

influential in contributing to a revitalized view of how health could be conceptualised. Other challenges at this time related to the rising cost of healthcare and the disproportionate amount of the health budget that was being spent on acute services (Davies & Kelly, 1993), a matter that was viewed as unsustainable. At the same time, mortality and morbidity from many chronic diseases continued to increase. Thus, medicine and health care seemed neither effective nor efficient (Cochrane, 1972).

The first acknowledgement by a major industrialised country that technical medical care was not primarily responsible for creating health improvements at the population level appeared in a report *A New Perspective on the Health of Canadians* (Lalonde, 1974). In this relatively succinct 77 page report Lalonde uses the Health Field Concept, developed a year earlier by Laframboise (1973) based on some of McKeown's (for example, McKeown, 1971; McKeown, Brown & Record, 1972; McKeown, 1973) earlier work, to produce a health promotion strategy to improve population health. Glouberman and Millar (2003) argue that it was in this report that ideas about the wider determinants of health, health promotion and health inequalities were first articulated. However, over 100 years prior to Lalonde's report Engels (1844) wrote the report, *Conditions of the Working Class*, in which he put forward ideas about how class, wealth and occupation could unjustly affect health; this is an example of the futility of trying to identify the root of ideas (Elias, 1983).

The Lalonde Report (1974) was an important report in the history of public health as it was a precursor to the Ottawa Charter (1986) and the 'new public health'. The Health Field Concept comprises four health fields that are interdependently responsible for individual health namely the environment, human biology, lifestyle and health care organisation. Lalonde writes abundantly throughout the report about the 'environment'. Descriptors relating to the 'environment' are almost exclusively deleterious, for example: "risk" (p.4); "threats" (p.5); "adverse" (p.6); "hazards" (p.8); "problems" (p.18); "deterioration" (p.26); and "pollutants" (p.46). The following passage captures the way the environment is framed:

> The environment category includes all those matters related to health which are external to the human body and over which the individual has little or no control. Individuals cannot, by themselves, ensure that foods, drugs, cosmetics, devices, water supply, etc. are safe and uncontaminated; that the

> health hazards of air, water and noise pollution are controlled; that the spread of communicable diseases is prevented; that effective garbage and sewage disposal is carried out; and that the social environment, including the rapid changes in it, do not have harmful effects on health. (p.32)

This quotation illustrates that the environment is a central theme in the report, and that it is conceptualised as posing a number of threats to human health and wellbeing. Morris, Beck, Hanlon and Robertson (2006) argue that its status, at the time, was elevated to the level of health care in that its importance to health was raised to the level of the biomedical model, and note this as a "radical step" (p.891). There was one reference to 'nature' in the report; it was part of one of the 23 health promotion recommendations and in the same sentence there is a solitary reference to green space in the form of playing fields:

> Promotion of the development of simple intensive-use facilities for more physical recreation including fitness trails, nature trails, ski trails, facilities for court games, playing fields, bicycle paths and skating rinks. (p.68)

In this short quotation the development of 'nature trails' and 'playing fields' are examples of facilities to increase physical recreation; the interaction with nature is a means to an end. This is an example of what has been called "functional engagement" with nature (Barton & Pretty, 2010, see Section 6.3). Nevertheless Lalonde (1974) put the environment back into the picture.

4.6 Health promotion and the new public health

The emergence of broader environmental discourses (including, but not necessarily focussing on, the natural environment) within the field of public health can be related to the development of what has been called the 'new public health' in the 1980s. Young and Whitehead (1993) argue that this movement has been viewed by some as a return to the environmental basis of the public health movement of the 19th Century. In the 'new' public health, the definition of public health is set in broad terms that are largely removed from traditional biomedical notions of public health which had become common at that time (Petersen & Lupton, 1996). The new public health was underpinned by a broader ecological perspective on health which "brings together environmental change and personal preventative measures with appropriate therapeutic interventions …" (Ashton & Seymour, 1988, p.21). In the new public health the environment is not only conceptualized as physical but also as social and

psychological (Ashton & Seymour, 1988). Thus the categories of 'population' and 'the environment' in the new public health are conceived of in their widest sense (Petersen & Lupton, 1996).

Public health according to the model outlined above has been described as being based on an 'upstream' approach (McKinlay, 1979). This approach focuses on enhancing population health by creating the social, economic and environmental conditions which promote health and prevent illness and disease, as distinct from a 'downstream' approach which is focussed on treating ill health through the acute health care system which is largely the preserve of the National Health Service (in England) (Orme, Powell, Taylor & Grey, 2007). McKinlay (1979) first used the term 'looking upstream' in an address to the American Heart Association. It refers to the analogy of a rapidly flowing river to represent ill health whereby many patients fall into the water only to be rescued downstream by doctors who have no time to look upstream to consider why the patients are falling in. McKinlay (1979) characterized 'downstream' activity as short term and related to specific problems at the individual level and upstream as long term, related to the prevention of problems and the promotion of health at the population level.

The theme of sustainability and conservation was a major theme reflected in the *Ottawa Charter for Health Promotion* (World Health Organization, 1986). The Ottawa Charter, described by Nutbeam (1997) as a landmark in the history of public health, is the name of an international agreement signed at the First International Conference on Health Promotion. Antecedents to the conference include a debate at the World Health Assembly on inter-sectoral action for health (1977), the Declaration on Primary Health Care at Alma-Ata (1978), and the World Health Organization's Targets for Health for All (1985) document; health promotion ideas had been circulating in these formally convened figurations and other figurations for some time. People at the First International Conference on Health Promotion built on debates from these and other sources with the aspiration of changing public health to a new public health. The words 'the move towards a new public health' appear as an important, but often forgotten, sub-title of the charter (Kickbusch, 2007). The Charter identified five key action areas for promoting health namely: building

healthy public policy, creating supportive environments, strengthening community action, developing personal skills, and the reorientation of health services.

With reference to the Ottawa Charter, Hancock (2007) noted that for the first time in a World Health Organization document a stable ecosystem and sustainable resources were listed as fundamental prerequisites (determinants) of health. An 'ecosystem' is a term attributed to the British ecologist Arthur Tansley (1935) it comprises:

> The whole system … including not only the organism-complex, but also the whole complex of physical factors in the widest sense. Though the organisms may claim our primary interest, when we are trying to think fundamentally we cannot separate them from their special environment, with which they form one physical system. (p.299)

Jackson and Kochtitzky (2001) argue that humans, with their cultural diversity, can be seen as an integral part of ecosystems and that ecosystem collapse can have a deleterious effect on health. For example Jenkins (2003) notes how biodiversity losses can impair pollination and waste removal, delete the reservoir of new crops and medicines and interfere with the regulation of infectious disease.

The Ottawa Charter made specific reference to the natural environment under the key action area 'Create Supportive Environments':

> Our societies are complex and interrelated. Health cannot be separated from other goals. The inextricable links between people and their environment constitute the basis for a socioecological approach to health. The overall guiding principle for the world, nations, regions and communities alike is the need to encourage reciprocal maintenance - to take care of each other, our communities and our natural environment. The conservation of natural resources throughout the world should be emphasized as a global responsibility… The protection of the natural and built environment and the conservation of natural resources must be addressed in any health promotion strategy. (WHO, 1986, para.1)

In the 12 years between the Lalonde Report (1974) and the Ottawa Charter (WHO, 1986), discourse about 'the environment' specifically includes the natural environment. There is a move away from the environment being perceived as something that presents hazards and threats that must be controlled. The emphasis has become one of caring, protecting and conserving for the mutual benefit of

humans and the environment, a discourse embodied in the concept of sustainability. The discourse in the Ottawa Charter (WHO, 1986) implies a relationship with the natural environment through 'reciprocal maintenance' in which communities take care of each other and the natural environment. Thus the discourse reflects the concept of responsibility, which is an underpinning idea related to sustainability.

The aetiology of the new public health and the reappearance of attention on the natural environment was part of a long term process of development in which there were very many interweaving processes, some of which have been drawn on in the above discussion. Many figurations of interdependent people gave thought to the physical environment in terms of both its built and natural aspects in the 12 intervening years between the publication of the Lalonde Report, *A New Perspective on the Health of Canadians* (1974) and the Ottawa Charter (1986). For example, in his address to the American Public Health Association's 104th Annual Meeting in 1976, Lalonde (1977) was already building on the contents of his report by drawing attention to the ecological limitations of the planet and the overriding importance of this in considerations of determinants of health. This is an example of how ideas are developed as they diffuse through figurations of people. For further discussion about the sustainability agenda and the influence of people in this sector see Section 4.8.

A further discourse in the Ottawa Charter, noted by Saan (2007), is the focus on positive health through empowerment underpinned by salutogenic ideas and values. Salutogenesis is an orientation to health which seeks to examine how health is created rather than focusing on pathology; it is a perspective that is based on factors that enhance health. The conceptual neologism of salutogenesis was proposed by Antonovsky (1979) and involves a shift from the deficit model of disease to the health potentials in everyday life, in everyday settings. Whilst is was implied in the Ottawa Charter that all have a duty of care to the natural environment the Charter appears to fall short of describing an interdependent relationship in which nature and the natural environment affords *benefits* to health and wellbeing. Further, the natural environment or green space was not specifically identified as an everyday setting; this idea was yet to re-emerge. However, the idea of health creation in the settings of everyday life implies interdependency based on an ecological understanding of human health, although not explicitly expressed.

4.7 Green spaces as settings for enhancing health

A setting for health is defined in the *Health Promotion Glossary* of the World Health Organization as "the place or social context in which people engage in daily activities in which environmental, organizational, and personal factors interact to affect health and wellbeing" (Nutbeam, 1998, p.19).

One example of the settings approach to health is the 'Healthy Cities' initiative which started in the mid-1980s, and became a specific WHO project in 1986, to "put health on the agenda of decision-makers in the cities of Europe and to build a strong lobby for public health at the local level" (Tsouros, 1990, p.11). The settings approach to health was also described in the Ottawa Charter (WHO, 1986). It states in the Charter that "health is created and lived by people within the settings of their everyday life; where they learn, work, play and love" (para. 20). Thus it can be seen that 'context', through a focus on the 'setting', begins to be seen as a factor in determining health although as previously mentioned, the natural environment or green space was not specifically identified as a setting in the Ottawa Charter.

Neither was it explicitly identified as a setting, subsequently, in the report *Environment and Health: The European Charter and Commentary* (WHO, 1990). In that Charter the references to health were largely expressed in terms of the direct pathological effects of biological and chemical agents or health protection from the hazards arising through ozone layer destruction and climate change, poor water and air quality, and the environmental impact of road transport. However in a list of health promotion priorities, within the *European Charter on Environment and Health*, the environment is seen as a resource for wellbeing: "The environment should be regarded as a resource for improving living conditions and increasing wellbeing" (p.2) and the theme of responsibility appears strongly in the narrative:

> The entitlements of individuals do not exist without corresponding responsibilities, not only to protect the safety of others but to help promote a safe, health-enhancing environment for the community … Individuals are responsible for the quality of the urban, rural and natural environments because they significantly influence health and wellbeing. (p.31)

By the mid-1990s the WHO Healthy Cities project was becoming an international movement. People from participating cities that were also part of the Organisation

for Economic Co-operation and Development (OECD) Ecological Cities Programme shared their experiences and initiatives at the International Healthy and Ecological Cities Congress in Madrid, 22-25 March 1995. The proceedings of the congress were published in the report *Our Cities, Our Future: Policies and Action Plans for Health and Sustainable Development* (Price & Tsouros, 1996). The report contains case studies about 15 participating cities. Within the 274 page document there are numerous references to green space, nature, the natural environment, and health promotion. References to 'settings' mention the home, the workplace, schools and communities but not specifically to green space as a setting. At a similar time Kickbusch (1995) noted that the settings for health promotion were typically formal institutions such as schools, hospitals, and workplaces and argued that health promotion practitioners should move to less obvious settings.

The focus on green space, that is to say, gardens, allotments, urban forests and parks as settings for enhancing health has received renewed attention recently. As previously discussed, town planners in the 19th and early 20th Century valued parks and open green spaces as places for fresh air, contact with nature and moral health (Ward Thompson, 1998; MacMaster, 1990; CABE Space, 2005). By the 1880s most urban areas had parks with horticultural displays, bandstands, themed gardens, public art, tea rooms, pet corners and boating lakes (English Heritage, 2005). Initially sports, with the exception of bowls, were not allowed but between 1920 and 1930 became established (Pettifer, 2004a). Then from the 1960s onwards (at the time Jacobs (1961) was criticising their design and potential to be deprived places, see Section 4.3) until the late 1990s there followed a period of decline in the quality of parks (Pettifer, 2004b). Rohde and Kendle (1997) argue that although parks had not entirely lost their connection with health, the modern emphasis was almost exclusively on their use as a venue for leisure and sport. This trend has since been reversed (CABE Space, 2010) in that parks fulfil a range of functions including the promotion of healthy lifestyles, the encouragement of biodiversity, the promotion of cohesive communities, and the building of social capital.

In an extensive review of the literature on the health benefits of contact with nature in a park context Maller et al. (2008) claim that parks:

> … are the chief means of maintaining intact natural ecosystems and preserving biodiversity in a world that is becoming increasingly urbanised. Because of this, parks play an essential role in public health, as they are the most readily available (or sometimes the only) source of nature for the majority of people who live in urban areas. (p.7)

Similarly, Godbey (2009) argues that municipal parks and recreation settings that are close to home offer some of the best opportunities to go outside, be active and connect with nature. Maller et al. (2008) have summarized the contribution of parks to human health and wellbeing (see Table 4.1) and conclude from their literature review that the health potential of parks as settings often remains unacknowledged and underutilised. Wheater et al. (2007) suggest a 'public health park ranger' whose remit would be to improve the potential of parks for community health gain. Similarly Dustin, Bricker and Schwab (2009) draw attention to the possibilities of more professionals who work in the area of leisure and recreation, particularly within the park setting, contributing to the health promotion agenda. With reference to the park environment, Spangler and Caldwell (2007) call for more research into the partnerships between traditional health professionals and professionals in the leisure and recreation industries who are delivering health promotion. In summary, parks as settings for health promotion have received renewed interest in the late 20th Century and early 21st Century in the UK. They offer opportunities for people to visit local green spaces and thereby connect with nature in a variety of ways.

Table 4.1 A summary of the contribution of parks to human health and wellbeing (adapted from Maller et al., 2008, p.21)

Component of health	Contribution of parks
Physical	Provide a variety of settings and infrastructure for various levels of formal and informal sport and recreation, for all skill levels and abilities, for example, picnicking, walking, dog training, running, cycling, ball games, sailing, photography, birdwatching, rock climbing, camping
Mental	Make nature available for restoration from mental fatigue; solitude and quiet; artistic inspiration and expression; educational development
Spiritual	Preserve the natural environment for contemplation, reflection and inspiration; invoke a sense of place; facilitate feeling a connection to something beyond human concerns
Social	Provide settings for people to enhance their social networks and personal relationships from couples and families, to social clubs and organisations of all sizes, from casual picnicking to events days and festivals
Environmental	Preserve ecosystems and biodiversity, provide clean air and water, maintain ecosystem function, and foster human involvement in the natural environment, for example, Friends of Parks groups

As well as showing the contribution of parks to human health and wellbeing, Table 4.1 also reveals some of the ways that people engage with nature. Barton and Pretty (2010) have usefully devised a classification system of the levels of engagement with nature; they suggest that there are three levels of engagement. The first way is by viewing nature from a window or in a painting, which is seen as a passive activity that reduces stress, aids recovery, and improves mental wellbeing. The second way they term functional engagement which is incidental exposure to nearby nature whilst engaging in some other activity (passive or active), for example, reading a book in the park. The third level is active participation which is a positive decision to visit nature and green spaces to participate in an activity and interact with nature, for example, a fungal foray.

4.8 Converging agenda of the sustainability movement and the new public health

In 1972 the impact of human activity on the biosphere was central to the *Declaration of the United Nations Conference on the Human Environment* (United Nations Environment Programme, 1972). In this document the responsibility of humans to 'collaborate' with nature to protect and improve the environment as a way of securing quality of life was emphasised.

The term ‘sustainable development’, articulated in the 1980s, originally appeared in a report by the International Union for the Conservation of Nature and Natural Resources (IUCNNR, 1980). The term was later defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (p.43) in the Report of the World Commission on Environment and Development, *Our Common Future*, more commonly known as the Brundtland Report (WCED, 1987). Whilst this report did not generate a particularly strong connection between health and sustainable development the report did address concerns about the deterioration of the human environment and natural resources in relation to wellbeing, and it was forecast that “the Earth’s endowment of species and natural ecosystems” (p.133) would soon be considered as “assets for the benefit of all humanity” (p,133).

The 1980s and 1990s were decades when the increasing complexity of health and environmental issues was brought by advocates, interest groups, academics and professionals to the centre stage of world politics. The emergence of the sustainability agenda focussed attention on the place of human health in relationship to that of planetary health. A key point of convergence occurred at the Second International Conference on Health Promotion, Adelaide, 5-9 April 1988 (WHO, 1988). Those present at this conference advocated that, as a priority, the public health and ecological movements should join together to develop strategies in pursuit of socio-economic development and the conservation of the planet’s limited resources. Thus these formal moves by health promotion advocates at the World Health Organization, from the 1980s onwards, were part of the process of bringing together the agendas of the public health and ecological movements. This is indicative of expanding interdependencies within and across these figurations.

Shortly after the decade of the 1980s the ‘Earth Summit’ in Rio de Janeiro took place (United Nations Conference on Environment and Development [UNCED], 1992); this is often described as a landmark achievement in terms of rethinking economic development to take cognisance of the destruction of irreplaceable natural resources. It was at this conference that a significant marker between health and sustainable development was put down; the first principle of the 1992 Rio Declaration notes that “Human beings are at the centre of concerns for sustainable development. They are

entitled to a healthy and productive life in harmony with nature" (UNCED, 1992). The Earth Summit had two important outcomes, the first was the political commitment of 116 nations to a blueprint for sustainable development for the 21st Century (known as 'Agenda 21'). The second was the opening of a treaty for signature to provide a legal framework for biodiversity conservation. The treaty entered into force in December 1993. Known as the *Convention on Biological Diversity*, the treaty uses an ecosystem approach to promote the equitable use and management of land, water and living resources. Although the treaty was ostensibly about biodiversity conservation, the health of humans would also benefit from this approach. This specific event is a good illustration of an outcome emerging from the long term development of ecological ideas within different figurations that expanded and became interwoven to pursue mutually beneficial goals.

More recently and in recognition of the idea that ecosystems can provide valuable benefits to the sustenance and fulfilment of human life, a Millennium Ecosystem Assessment (MEA) was called for by Kofi Annan, the United Nations Secretary-General. The four-year assessment was initiated on June 5, 2001 at the National Institute for Public Health and the Environment in the Netherlands. The objective of the Millennium Ecosystem Assessment was "to assess the consequences of ecosystem change for human well-being and the scientific basis for action needed to enhance the conservation and sustainable use of those systems and their contribution to human well-being" (MEA, 2005, p.ii). The Millennium Ecosystem Assessment involved the work of more than 1,360 expert natural and social scientists worldwide. They synthesised the findings of existing research and classified the services that ecosystems provide into four broad categories: provisioning services, regulating services, cultural services and supporting services. These categories cover such things as air quality maintenance, spiritual enrichment, aesthetic experiences, sense of place and recreation. These categories are similar to those, identified earlier in this chapter (see Sections 2.1, 2.2, and 2.3), as reasons some people in the late part of the 19th and early 20th Century sought contact with nature. This illustrates that there is empirical work to support what was previously known intuitively and that these ideas have re-emerged in a different form as they have diffused through multiple diverse figurations over the very long term.

4.9 The involvement of conservation and wildlife agencies in health promotion

The Royal Society for the Protection of Birds (RSPB), and The Wildlife Trusts are organisations established over a hundred years ago (in 1889 and 1912 respectively), originally to protect species from destruction and over collection. Adams (2003) documents the growth in concern for conservation from 1949, when there were a small number of naturalists, through the 1960s, 1970s and 1980s to contemporary times when now many more people are involved in conservation and wildlife protection. Adams charts this growth by looking at membership numbers of organisations such as the RSPB, The Wildlife Trusts, and the National Trust and notes that membership of these organizations soared in the 1980s. Adams also notes the growth in government and voluntary conservation agencies, reflecting increased interest in conservation throughout the 20th Century in the United Kingdom. As interest in conservation has expanded it has taken on a different form. Macnaghten and Urry (1998) argue that in the post-war period the approach to conservation was one of "ghettoisation of nature" (p.43) in that conservation was about the creation of wildlife sanctuaries "cloistered from the wider town and countryside" (p.43). By the 1990s there was no such separation, the approach from environmentalists being more concerned to connect people and nature in rural landscapes and urban green spaces for mutual benefit.

Similarly McCormick (1995) notes the shift in attention across the decades from the protection of wildlife and habitats, to the conservation of natural resources, to concern for human survival. Thus the purpose of conservation broadened and continued to do so such that from the late 1990s onwards alongside the concern for human survival a concern for human health developed. Hence conservation/wildlife based agencies were increasingly adopting an approach which took cognisance of the value and benefits to humans of species protection, that is to say, an ecosystems service approach as it has been labelled (Joint Nature Conservation Committee, 2014).

Around the time that these early alliances between the health and environment sector, were being developed, Henwood (2002) wrote a report for the NHS Health Development Agency which addressed the question *Is there a role for environmental and countryside agencies in promoting benefits to health?* Henwood concluded:

> In developing strategies for promoting the health benefits of the outdoor places and spaces they oversee, and the amenities and services they provide, countryside agencies need to consider a range of agendas, including those of health professionals, environmental scientists and organisations, members of the public and policy makers. (p.12)

The National Trust is a further example of a conservation/wildlife based agency involved in the promotion of the idea of contact with nature to enhance health. The National Trust, which traditionally has more of a history of such involvement than the other two organisations, has recently escalated its interest in connecting children with the natural world as the following extract from the research report *Natural Childhood* (Moss, 2012) shows:

> The National Trust was founded in 1895 with a mission to promote the preservation of places of historic interest and natural beauty for the benefit of the nation … it is Europe's largest conservation organisation … and today Nature Deficit Disorder demands a response from the Trust. With the publication of this report, the National Trust is opening the conversation and showing the willingness to play a leading role on this vital issue. (p.1)

4.10 Public health models that feature contact with nature

Alongside explicit references to the value of nature and the natural environment to health appear in various European and International charters and declarations, various models showing the natural environment as a determinant of health began appearing in the public health academic literature. These models, which span three decades (1985-2012), illustrate the development in thinking about contact with nature to enhance health in the academic field, that is to say, amongst figurations of researchers.

An early model developed at the Department of Public Health, City of Toronto and described by Hancock (1985) called the 'mandala of health' presents the natural environment as a context for health (see Figure 4.2). This model shows the natural environment or living planet (termed biosphere in the model) as the overarching context within which people lead their lives and represents health as relative to the wider ecosystem. In writing about this model Hancock (1993) explains that the model should be seen as three-dimensional and dynamic in which the various elements alter in shape and size over time and in different communities. In essence

the model is not about focusing on a single determinant of health but implies a multi-level, multi-faceted and multi-disciplinary approach to health, that is to say, the variables are interdependent and interconnected (Hancock, 1993). Hancock, in reflecting on the model eight years after it was first published, comments on the absence of the concept of sustainability, that is to say, the maintenance of the "great web of life in all its richness and diversity" (p.44).

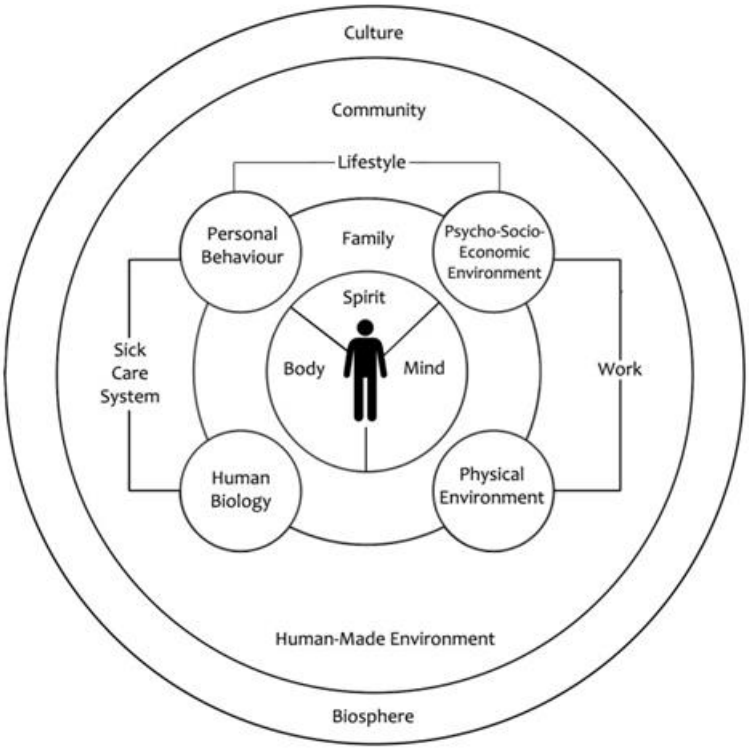


Figure 4.2 A model of the mandala of health (redrawn from Hancock, 1985, p.2)

Another more recent model in the literature is Barton and Grant's (2006) health map (see Figure 4.3). This model builds on the work of Dahlgren and Whitehead (1991) whose original diagram shows the relationship between health and the physical, social and economic environment (Barton & Grant, 2006). In Figure 4.3 the determinants of health and wellbeing in neighbourhoods are illustrated, and the natural environment is afforded a layer of influence. Barton and Grant's (2006) inspiration for their model came from ecosystem theories and the principle of sustainable development. In the model the concentric circles are arranged to represent layers of influence on health and wellbeing. The global ecosystem and natural environmental layer is shown as influencing the other determinants of health.

In their explanation of the model they offer an example of how building a new road can "affect the local natural environment (air pollution) and the global ecosystem (greenhouse emissions)" (p.253), that is to say, their perspective is one of threats and hazards to health. The positive benefits of the natural environment for health through contact with nature are not referred to in their explanation of the model, although conceivably the layers of influence can work positively as well as negatively.

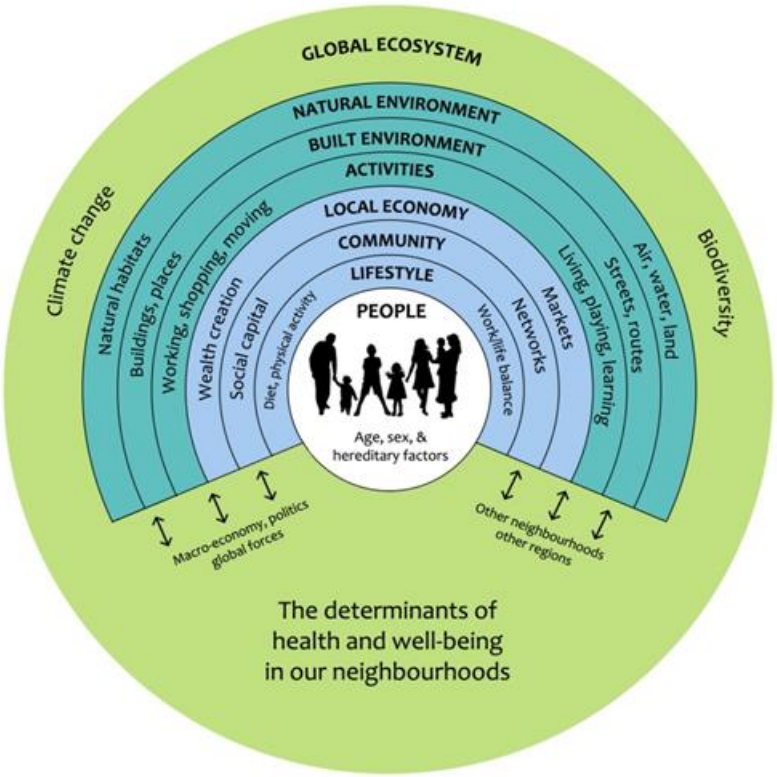


Figure 4.3 The health map (redrawn from Barton & Grant, 2006, p.252)

Rayner (2009) has been critical of models in the public health literature that show the environment as "tacked on as a mediating layer of influence" (p.589) in what is essentially a socio-ecological model. Jackson and Kochtitzky (2001) have claimed that in terms of contextual influences on health that our place within and dependence upon ecosystems is the most fundamental and others (for example, Coutts, 2010) that the natural environment is the primary level of influence. As all the layers are inextricably linked, that is to say interdependent, and operate on a person's health and wellbeing at different times in different contexts then to suggest a hierarchy of influence is inaccurate.

More recently, Dustin, Bricker and Schwab (2009, p.8) have proposed an ecological model of health promotion based on some of the empirical literature relating to the health and wellbeing benefits of contact with nature (for example, Faber-Taylor, Kuo, & Sullivan, 2002; Kaczynski & Henderson, 2007). The model puts biodiversity conservation and ecological health in the centre (see Figure 4.4) and illustrates the symbiotic relationship between the health of the individual, family, community, nation and the planet; the model attempts to convey the notion of interdependency within a global ecosystem. In this model the environment is more than a 'context' for promoting individual and population health, it is part of the ecosystem of which all living things are a part and within which health might be enhanced as well as undermined.

Figure 4.4 Ecological model of health promotion (redrawn from Dustin, Bricker & Schwab, 2009, p.8)

4.11 An ecological public health paradigm

McLaren and Hawe (2005) argue that in response to the complexity of public health there has been an increasing interest in ecological perspectives because they offer a more adequate way of representing such complexity. Some authors, for example, Kickbusch, 1989; Nutbeam, 1998; Arya et al., 2009; Morris, 2010; Coutts, Forkink & Weiner, 2014 claim that a new paradigm, an ecological public health paradigm, is emerging and that this is a development of the new public health and the sustainability agenda. Discourse about the idea of contact with nature to enhance health in relation to this concept is complex because of: i) variance in the use of the term ecology/ecological, ii) discrepancies about the appearance of the paradigm in temporal terms, iii) lack of clarity about what constitutes an ecological public health paradigm, and iv) the centrality or otherwise of nature and/or the natural environment to any such paradigm. Within these limitations an outline of the ideas is presented in order to show some of the exponents of and thinking behind the concept of an ecological public health paradigm thus revealing another aspect to the diffusion of the idea of contact with nature to enhance health.

Throughout the era of the new public health, there have been successive decades of the use of the word ecology in various forms. The term 'ecology' or 'ecological' is often used in public health when a holistic perspective is taken, that is to say, a socio-ecological approach or broader still an approach that takes cognisance of economic, organisational and political environments (Green, Richard & Potvin, 1996). For example, in focusing on individual and social environmental factors as targets for health promotion interventions McLeroy, Bibeau, Steckler and Glanz (1988) use an ecological model and in proposing a framework for the delivery of public health, Nurse and Edmondson-Jones (2007) use an ecological approach. However, nature and/or the natural environment are not specifically referred to in either of these two examples. The meaning that is being attached to 'ecological' in these examples is that health is influenced by many factors and most of them are interrelated. Thus the use of the term 'ecology', and its derivatives 'eco' and 'ecological', are often broadly applied within public health and the explicit link to natural ecology within notions of socio-ecological models of health need not be present.

Several authors write about an ecological public health paradigm in which ideas about health and ecology are interwoven. There is no consensus about the origins of this paradigm. An early writer about ecology and health was Dubos (1959) in the 1950s, however, Kickbusch (1989; 1999) dates the emergence of the ecological public health paradigm alongside the development of the 'new' public health, although and maintains that the concept of an ecological public health has emerged in response to a shift in risk patterns due to the threats posed by global environmental problems to population health (for example, climate change, over population and urbanisation) and awareness that the world's resources are finite: all issues which evade simple models of causality and intervention (Kickbusch, 1989; 1999). Kickbusch's clarification of what is meant by 'ecological public health' is couched in terms of threats, hazards and risk. Alternatively, Nutbeam (1998) defines ecological public health as the "common ground between achieving health and sustainable development" (p.3) whilst Morris (2010) claims that ecological public health is concerned with a move away from hazard focused environmental health agendas to 'everything matters'. This illustrates how ideas and interpretations co-exist in a dynamic way in figurations, with those with the most relative power being able to push forward their interpretations during periods when receptivity to such ideas is high.

An observation of all of the aforementioned literature about the concept of an ecological public health paradigm is that the concept is variously defined and there is no consensus of how an ecological public health paradigm is differentiated from the new public health paradigm. Perhaps this is most clearly differentiated and explained in a review of the new public health by Petersen and Lupton (1996), who conclude that "in the new public health as a whole there has been a tendency to view human society and the 'natural environment' as conceptually distinct" (p.144). Petersen and Lupton (1996) argue that whilst the approach taken in the new public health "does not ignore the role played by humans in influencing their environment" (p.105) a greater emphasis is placed on the effects of environmental damage to people's health. In other words the risk to human health from the environment is more of a concern than the risk posed by humans to the environment. Petersen and Lupton (1996) differentiate an 'ecological approach' to public health from the new public health; they see an ecological approach as one that:

> … seeks to incorporate humans into nature rather than constructing them as separate. Thus humans are taken from their 'outside' stance as the penetrators and destroyers of nature and placed within the ecosystem as biological entities sharing the results of environmental change. (p.105)

Although the perspective offered by Petersen and Lupton (1996) is helpful in teasing out the differences between the new public health and an ecological approach their explanation does not wholly convey the idea of *benefits* afforded by nature and the natural environment.

In a similar vein, and more latterly, the theme of connectivity with the natural environment has been addressed by Stevens (2010). Stevens, in writing about restorative natural environments, that is to say, the benefits to health that the natural environment can provide, argues that we are embedded in the environment and that notions of 'self' and 'environment' create a false dichotomy. Correspondingly, Stevens (2010) proposes a view of wellbeing that takes cognisance of the dynamic relationships between people and restorative natural environments.

The most comprehensive work on ecological public health has been undertaken by Raynor and Lang (2012) who write extensively about broader ecological perspectives and where these are incorporated into constructs of health. In their work the term 'ecology' is based on the work of Ernst Haeckel who settled on a definition of ecology in 1870 (earlier versions appear from 1866). His definition appears in English at the beginning of the work *Principles of Animal Ecology* (Allee et al., 1949):

> By ecology we mean the body of knowledge concerning the economy of nature - the investigation of the total relations of the animal both to the inorganic and to its organic environment; including, above all, its friendly and inimical relations with those animals and plants with which it comes directly or indirectly into contact - in a word, ecology is the study of all those complex interrelations referred to by Darwin as the conditions of the struggle for existence. (p.v)

In response to their view that there is no one unifying model of ecological public health Rayner and Lang (2012) have developed a model based on their definition of the concept. They define ecological public health as follows:

> In the twenty-first century, the pursuit of public health requires the analysis of the composite interactions between the material, biological, social and cultural dimensions of existence. This demands a new mix of interventions and actions to alter and ameliorate the determinants of health; the better framing of public and private choices to achieve sustainable planetary, economic, societal and human health; and the active participation of movements to that end. Ecological Public Health is about shaping the conditions for good health for all. (Rayner & Lang, 2012, p.353)

Their model suggests a re-categorisation of public health across four interdependent dimensions of existence (see Figure 4.5), that is to say, the material, biological, social and cultural. According to their model nature and the natural environment appear under two dimensions: material (for example, as water and minerals) and biological (for example, as plants and animals).

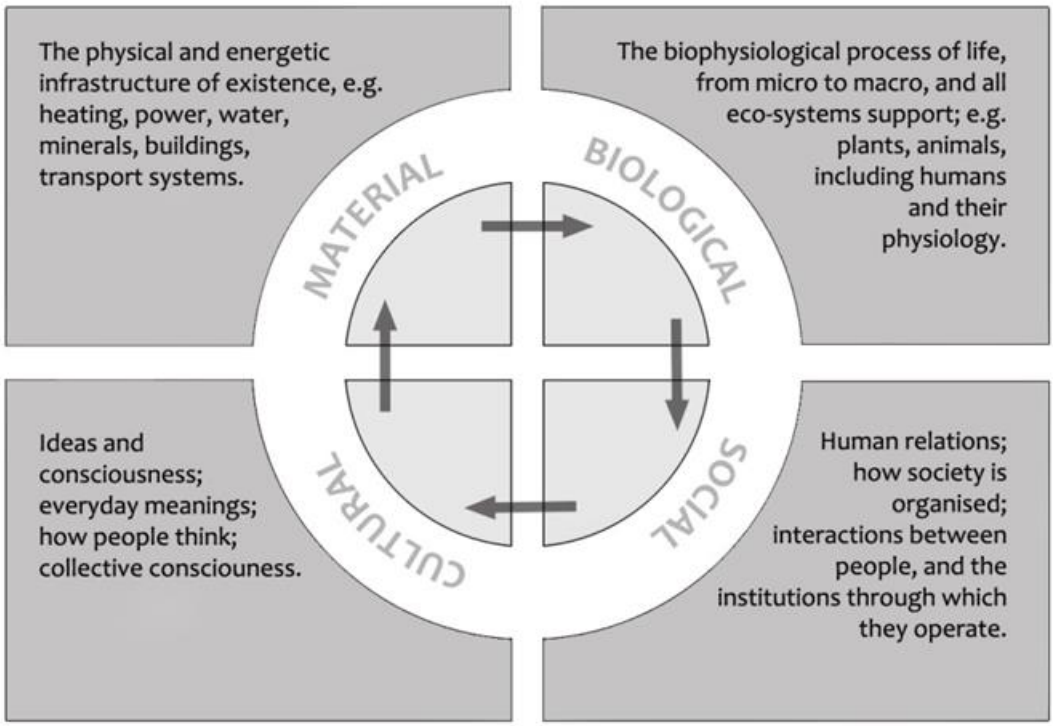


Figure 4.5 The four dimensions of public health (redrawn from Rayner & Lang, 2012, p.65)

Their model draws strongly on the 'eco-systems' concept (the authors have chosen to use the plural of the word ecosystem) and is built on a simple ecological public health model in which human health depends on 'eco-systems' health and importantly vice versa (that is to say, is interdependent) (see Figure 4.6 and 4.7).

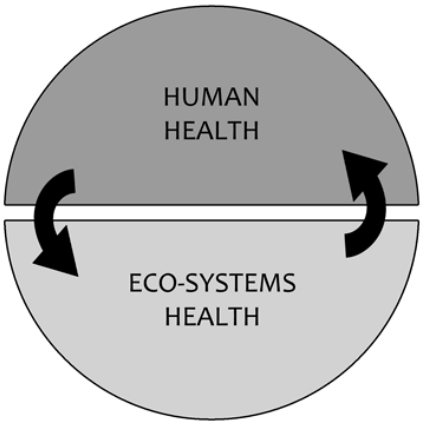


Figure 4.6 The dynamics of ecological public health a simple model (redrawn from Rayner & Lang, 2012, p.324)

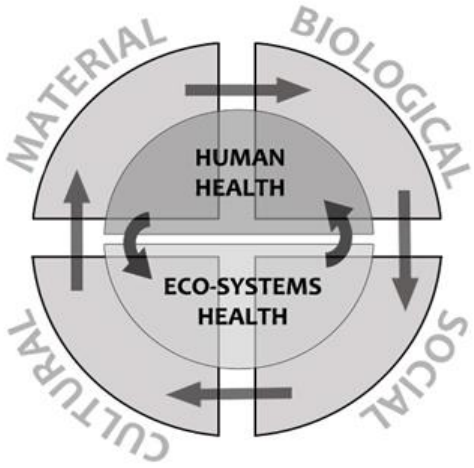


Figure 4.7 Aligning the four dimensions with the dynamics of ecological public health (redrawn from Rayner & Lang, 2012, p.325)

Further, Rayner and Lang's (2012) complete model (not shown) places Figure 4.7 under the influence of nine interconnected transitions (determinants of health) namely: demographic, epidemiological, urban, energy, economic, nutrition, biological, cultural, and democratic, all of which act across the four dimensions towards sustainable or unsustainable health outcomes. There is no hierarchy to the four interdependent dimensions of public health in the model. As well as conveying the complex, dynamic, interconnected world of ecological public health the authors also emphasise that within the model the dynamics framing health are not just the transitions "… but also the actions of social movements, the place of institutions and the passage of time" (p.325). These are all concepts that fit with Eliasian theory.

Having reviewed the way nature is depicted in public health models, and the development of an ecological public health paradigm within the literature, it is concluded that theoretical narratives about the relevance of nature to public health are becoming increasingly visible. Latterly, nature is placed on an equal footing with other health determinants in such models, and not at a distal position from figurations of interdependent people.

The chapter shows that enhancing health through contact with nature is not a new idea, that the idea is complex and has been a matter of interest to a broad spectrum of people and groups through time and across different cultures. The long term patterns

of continuity alongside change and the re-emergence of ideas and their use are revealed (Elias, 1978). In providing such a context it is evident that the idea has waxed and waned according to broader social, political and economic trends and patterns, and that much of the thinking and use of the idea of contact with nature to enhance health has been influenced by the environmental sector particularly the ecosystem concept of which humans are a part.

The Lalonde Report (1974) was a landmark report in terms of health promotion, and the Ottawa Charter (1986) a landmark document in adopting an ecosystem perspective within health promotion. Subsequently, discourse about the idea of contact with nature to enhance health has appeared in a range of public health policies, charters, and models/frameworks. Elias (2009a) points out in his essay *On Nature* humans must "bear full responsibility and a duty of care" to nature (p.65); the 1980s was the decade when this was increasingly articulated.

What this chapter has not explored is i) the research evidence relating to the idea of contact with nature to enhance health, ii) the contemporary policy literature, and iii) how the idea is used by people in organisations. This is the research evidence to action process and is the subject of Sub-study 1, 2 and 3 respectively. Following the empirical work of the three sub-studies an overarching analysis (Chapter 9) will be synthesised from the findings of each within the context of this historical chapter.

Chapter 5: Methodology

5.1 Introduction

This chapter begins with a restatement of the overarching research question and the three, corresponding and interrelated, lines of enquiry. The aim of the chapter is to show how, through a description and explanation of the research design and the methods selected for Sub-studies 1, 2, and 3, the questions were operationalised. A priori justification of the approach is given with reference to ontological and epistemological considerations which draw on the theoretical work of Norbert Elias and the methodological approaches he took in his own empirical research.

5.2 Overarching research question and questions arising out of the literature review

Figurational sociology provides a framework within which it is possible to pose questions that address sociological phenomena across many levels. It is argued by van Daalen and Kuipers (2013) that this allows researchers to be able to ask big questions that examine the interaction between every day and long term or large scale processes and to connect this in an overall narrative. The overarching research question in this thesis is: *how has the idea of contact with nature to enhance health diffused through figurations of researchers, policy makers and into use through the actions of people in local organisations?* This question is complex and multi-faceted and is the type of question that Eliasian scholars do not shy away from.

Given that the diffusion of the idea of contact with nature to enhance health has not been systematically explored, it was not possible to show in the literature review (Chapter 2) how the diffusion of the idea has been investigated empirically and consequently what is known and what is not known about how the idea has 'travelled'. Instead the literature review examined the area of diffusion more generally and towards the end of the chapter focussed on the diffusion of other health related ideas.

Importantly, in Chapter 2 an argument was put forward for studying the diffusion of the idea through an Eliasian perspective and this was then developed further in

Chapter 3. A central aspect of this argument was that taking a long term view can assist in developing a more adequate understanding of the phenomenon that is the focus of this thesis and, relatedly, the requirement to choose methods that will facilitate this. In this chapter a rationale for the chosen methods of bibliometrics and content analysis is provided; these methods were used to reveal the figurations of people and organisations (essentially groups of people affiliated through employment) engaged in the use of the idea in some shape or form, the links between the figurations, and in turn the consequences that these figurations have on how the idea is taken up. Researching the views and motivations of individuals directly, albeit individuals who are part of figurations to a greater or lesser degree, is not an area of investigation in this thesis but is discussed as an area of further exploration upon completion of Sub-studies 1, 2 and 3 (see Section 9.6). The views and motivations of individuals have been studied indirectly, however, through the examination of organisational websites and the provision and/or promotion of activities by local organisations, for it is people who are behind these actions.

In the light of the literature reviewed the following questions have been developed as areas for investigation. The three lines of enquiry are:

Sub-study 1 - The emergence and framing of the idea of contact with nature to enhance health in the research literature.

- When did the empirical evidence first emerge?
- What has been the number of publications per year?
- Where has the empirical evidence been published?
- Who, in the research figuration, are the key actors producing the empirical evidence?
- What is the most frequently cited empirically based evidence?
- How has the idea been framed in the research literature?

Sub-study 2 - The emergence and framing of the idea of contact with nature to enhance health in the contemporary policy literature of England.

- When does the idea emerge in contemporary policy and to what extent does the idea appear?

- How have policy makers framed the idea in contemporary policy?
- How does this vary across the different government departments?

Study 3 - The appearance and framing of the idea of contact with nature to enhance health in organisations in Greater Manchester.

- What types of organisations are using the idea of contact with nature to enhance health in their work?
- What are the different types of activity?
- How and in what ways is the idea revealed by these organisations?

5.3 Ontological and epistemological considerations

Within sociological enquiry it is customary to discuss the philosophical concepts of ontology and epistemology and the relationship of these concepts to the methodology of the study (Bryman, 2008). Ontology addresses assumptions about the world and the nature of things, that is to say, "to do with whether the social world is regarded as something external to social actors or as something that people are in the process of fashioning" (Bryman, 2008, p.4). Epistemology is to do with our beliefs about how one might develop knowledge about the world. Bryman (2008) argues that "one of the most crucial aspects is the question of whether or not a natural science model of the research process is suitable for study of the social world" (p.4).

In Chapter 3 the theoretical perspective offered by Norbert Elias was discussed as a framework for the thesis. In one sense Elias used the terms epistemology and ontology very little. This is not to say that he did not think very deeply about these concepts. On the contrary he proposed an alternative way of thinking about the concepts in his writings on a *Sociology of Knowledge* (Elias, 1971). The main features have been captured by van Krieken (1998) as: i) the importance of the historical development of human knowledge, ii) seeing science as a social and collective endeavour, and iii) a relativistic conception of knowledge such that human knowledge lies somewhere between *involvement* and *detachment*. For Elias (1971) knowledge is not generated by individuals but "surpasses the life span and the capacity for discovery of a single individual" (p.165) and in developing knowledge "everyone stands on the shoulders of others" (p.165). Thus the researcher is never

totally independent and the status of knowledge is always provisional. Elias (1971) describes the difficulty of thinking otherwise, that is to say, he points out the futility of thinking in terms of "a lonely individual, an isolated 'subject' fishing here and now for knowledge of the connections of 'objects' in the vastness of an unknown world" (p.165). Elias preferred to think in terms of greater or lesser 'object-adequacy' which lies on the continuum between involvement and detachment. He notes in his work that the researcher who thinks and studies society is also a member of it (Elias, 1978). Therefore, Elias holds the position that the nature of all knowledge is, at least in part if not fully, socially constructed. Elias advocated stating one's own position and perspective when undertaking empirical research. He also advised his students to research a topic which was of interest to them, and one in which they were personally involved (Hughes, 2013). The stance taken in this thesis is that knowledge is socially constructed. The topic, the object of the diffusion process, is of interest because the personal experience of being outdoors and in contact with nature is uplifting and pursued whenever possible. Rojek (1992) argues that having stated their position and interest it is then incumbent on figurational sociologists to promote 'a methodology of self-consciously distancing oneself from the object of study' (p.17). This has been attempted in this thesis in that highly positive personal feelings about the wholesomeness and goodness of nature, descriptors that Elias (2009a) is highly critical of, have been set aside. Further, as this thesis is about diffusion a critical perspective of the work of Everett Rogers has been developed using the work of Elias by seeking to avoid reification and think in an Eliasian way, which to a non-sociologist is very challenging. This is the detachment process of which Elias writes.

In his work Elias is clear that sociological investigation is a process in which theorising and empirical investigation are undertaken in tandem as these concepts are interrelated such that one informs the other (Elias, 1978). His own sociological theory, arising out of his examination of French court society, is grounded in empirical research. Despite this conviction Elias chose not to write extensively about empirical methods but instead to demonstrate their use in his work (Baur & Ernst, 2011). The initial methods that Elias chose to use in his academic career were documentary research and statistical analysis; these being the instruments of early sociology before World War II later giving way to cross-sectional survey research

(Baur & Ernst, 2011). In addition he used a variety of data sources to study processes including maps, buildings, landscapes, survey or book keeping data, and spatial data of which he was a pioneer (Baur & Ernst, 2011). In some of his work he used interviews but not in his study of the civilizing process.

The work of Elias guides the researcher to focus on the relations of interdependencies and not to reduce the active process of diffusion, a concept that implies movement, to a static state. Elias (1978) maintains that our ability to understand processes is severely limited if we reduce processes conceptually to a static state; he argues that everyday language can be a contributing factor:

> Our languages are constructed in such way that we can often only express constant movement or constant change, in ways which imply that it has the character of an isolated object at rest, and then, almost as an afterthought, adding a verb which expresses the fact that the thing with this character is now changing … We say "the wind is blowing", as if wind were actually a thing at rest, which, at a given point in time, begins to move and blow. We speak as if the wind was separate from its blowing, as if a wind could exist which did not blow. (p.111)

Elias called the reduction of processes to static conditions *process reduction*. Similarly, Chia (1999) argues that we are not good at thinking about movement as "our instinctive skills favour the fixed and the static, the separate and the self-contained" (p.206) such that ideas about flux, movement, change and transformation are subordinated in favour of taxonomies, hierarchies, systems and structures. To take an Eliasian perspective is to view the diffusion process as dynamic such that through every interdependency "actions by one adopter may change the context for others" (Adams, Tranfield & Denyer, 2011, p. 38). This has implications for the design of the case study and presents difficulties for the researcher in that even as data is collected the context, process, and resultant patterns are changing. The challenge therefore is to design a case study which can capture, at least to some extent, long term processes about the diffusion of the idea of contact with nature to enhance health, across "different levels of inter-dependency and action" (Maguire, 1988, p.187) and to avoid a snapshot of the here and now. Baur and Ernst (2013) argue that a further challenge is to analyse the sociogenesis of figurations, that is to say, their "*becoming, change and ending"* (p.132). Methods such as bibliometric analysis, and content analysis over time, have been chosen in this thesis to elicit the

ebb and flow of the idea of contact with nature to enhance health and thereby investigate the social development of the idea (see Sections 5.6 and 5.7 for more detail). Sub-study 1 takes a long view, Sub-study 2 takes a long term view to some extent whereas Sub-study 3 is more of a snapshot of the diffusion of the idea in organisational use.

5.4 Case study methodology and design of the case study

Potvin (1996, p.S79) argues that "… method is the servant of the research question. Regardless of the epistemological and ontological perspectives, methodology and methods are developed for answering research questions". Further Potvin states that "the research questions, the nature of the object of inquiry and the context of the research are legitimate dictators of methodological decisions" (p.S79).

Elias (1998), in writing about the dominance of the scientific method, points out that investigators tend to narrow the scope of their enquiry as a way of increasing credibility:

> In order to be able to use methods of this kind and to prove themselves scientific in the eyes of the world, investigators are frequently induced to ask and to answer relatively insignificant questions and to leave unanswered others perhaps of greater significance. They are induced to cut their problems so as to suit their method. (p.231)

In this thesis broad questions are asked about complex processes which demand multi-level analysis, that is to say, an explanation is developed for the diffusion of the idea within and across figurations over time. Dopson (2003) promotes the use of case study methodology for improving understanding of complex social processes and exploring complex interdependencies between groups within social and historical contexts. Case study methodology is appropriate for descriptive or explanatory questions such as "what is happening or has happened?" or "how or why did something happen?" (Yin, 2012, p.5). Within the three sub-studies in this thesis, which together make up the single case, there are lines of enquiry that generate how much something has happened, for example, *to what extent does the idea appear in policy?* There are also lines of enquiry that look at the form that the idea takes in interdependent figurations of researchers, policy makers and in organisational use, thus mixed methods are used with the aim of describing and then explaining the

diffusion process relating to the idea of contact with nature to enhance health. The use of both quantitative and qualitative methods is frequently seen in case study designs (Bryman, 2008) and is combined in this case study.

Punch (2005), who sees case study as a strategy, states that "almost anything can serve as a case … a decision, or a policy, or a process, or an incident or event of some sort …" (p.144). In this thesis the case is about a process, that is to say, the diffusion of an idea. The 'case' is the diffusion process of the idea of contact with nature to enhance health through the interdependent figurations of researchers, policy makers and into use through the actions of people in local organisations.

Tight (2010) in writing about the term case study is critical of its use. He acknowledges the validity of the methodology in social science research, but claims as unnecessary the preoccupation of some authors (namely Stake, and Yin) in classifying the different types of cases. Thus, case study methodology is not represented by a single discrete approach.

A widely cited definition of case study research methodology is that of Yin (2009) who defines case study research methodology as "an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (p.18). This definition is problematic if using an Eliasian perspective. Figurational sociologists do not think in terms of boundaries but in terms of figurations of interdependencies. In this thesis a long term view of the phenomenon under investigation is taken therefore Yin's definition, which describes the phenomenon as contemporary, is not applicable. Further, Yin (2009) advocates a strict protocol for case study research which is not followed in this thesis. Yin (2009) advocates constructing and testing theoretical propositions, considers the use of interviews to be central "one of the most important sources of case study information is the interview" (p.106), and discusses in detail the triangulation of findings from the utilisation of multiple methods. These features are not evident here; in this thesis the case study methodology utilised follows an Eliasian approach. As Elias did not define the term case study Bryman's (2008) description is used as a sensitizing concept. Bryman takes case study research to mean a commitment to a

detailed and in-depth study with intensive analysis (Bryman, 2008). The research examines an aspect of everyday life, namely the diffusion of an idea, which fits with the oeuvre of research undertaken by Elias himself who studied such things as the developmental changes in manners, habits, taste, standards of dress, and leisure (Hughes, 2013). Elias tended not to think in terms of testing theoretical propositions but rather in terms of the relationship between theory and empirical evidence to be 'uninterrupted two-way traffic' (Maguire, 1988, p.188). In following Elias, value has been placed on a detailed single 'real-type' case study similar to that which Elias undertook on French court society (Mennell, 1992). For example, from his research Elias did not attempt to construct a model of the development of manners from this and other cases to achieve an 'ideal-type' which bears "a most problematic relationship to any particular instance of social reality" (Mennell, 1992, p.88).

Both Yin (2009) and Tellis (1997) argue that units of analysis are a critical part of the overall case study design. This, too, is problematic if using an Eliasian perspective. Units of analysis suggest compartments and separation rather than figurations which are open, dynamic, and interactive. Further, Tellis (1997) contends that rather than units of analysis being an individual or group of individuals, units of analysis are typically systems of action. In the language of Elias (1994) such systems of action are better described as networks of interdependency or figurations (see Section 2.2 for a discussion on the difficulties associated with the use of the word 'system').

In Elias's own work on French court society Elias divided the period of analysis, from the Middle Ages to the 20th Century, into sub-periods (Baur & Ernst, 2013) thereby making the empirical research manageable. Within this study there are three interrelated Sub-studies, these were chosen because they represent figurations where it was anticipated that it would be possible to study diffusion in a way that would shed light on the research questions, that is to say, in research, in policy, and in organisational use, thus multiple sources of data were used. The figurations are presented as three interrelated sub-studies, headed Sub-study 1, Sub-study 2 and Sub-study 3, each providing a context for and informing the subsequent study. In designing the case study attention was paid to the work of Dopson, Fitzgerald and Ferlie (2008) who, having reviewed the empirical work in the area of evidence based

innovations in healthcare settings, conclude that "context is an active component in the process of change and innovation" (p.228) and should be viewed as "an interacting element in the diffusion process" (p.228). Pettigrew, Ferlie and McKee (1992) point out that interconnections (interactions) take place at vertical and horizontal levels through time. A historical perspective (see Chapter 4) provides an ongoing context to the study. The utilisation of the theoretical perspective of Norbert Elias provides a justification for this approach (see Chapter 3). Figure 5.2 is included to show the design of the case study. It shows the figurations studied as part of the overall case study set within a historical context. Dashed lines are used to reflect the Eliasian perspective that underpins the design of the study, that is to say, the movement between interdependent figurations over time and space.

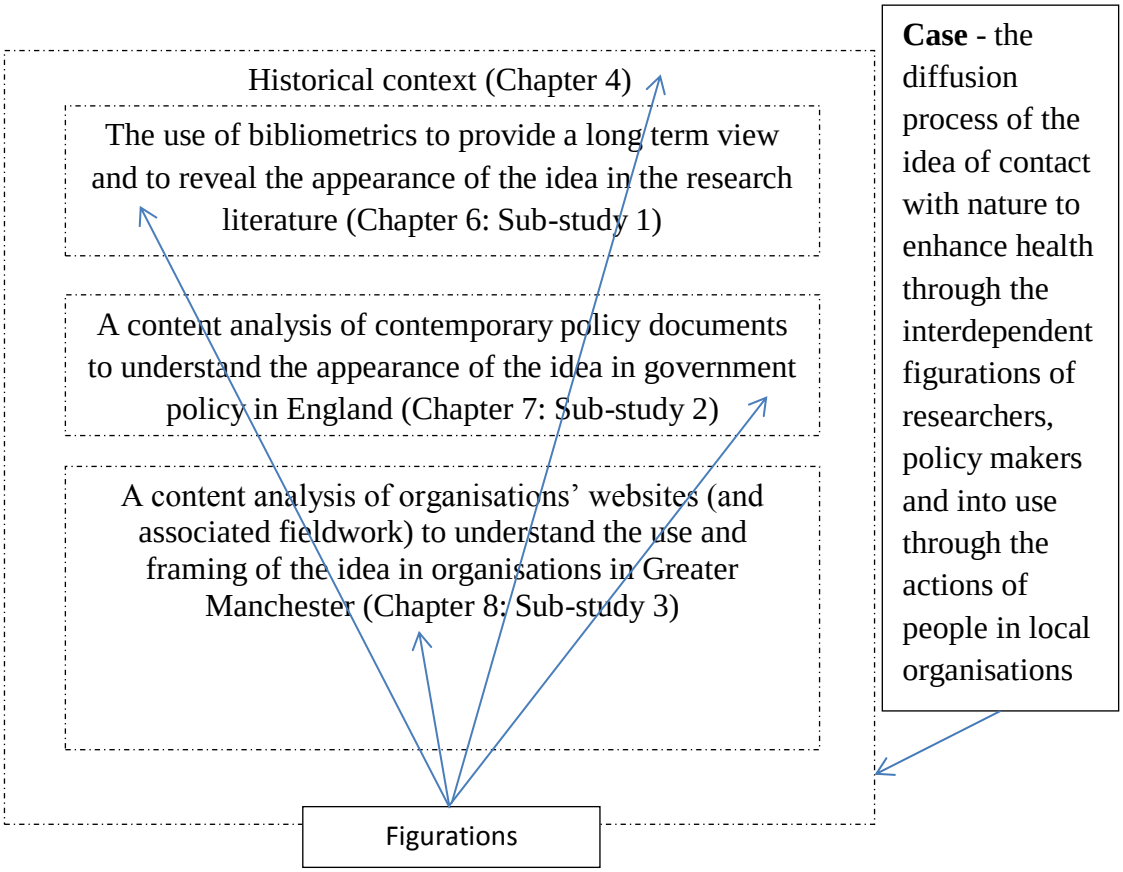


Figure 5.1 The design of the case study

Interdependencies or figurations from the academic, policy and organisational realms were chosen because they represent three large domains, temporally and spatially, in which to study the diffusion of the idea of contact with nature to enhance health. The three figurations are interrelated; furthermore, the three figurations comprise many other figurations. Whilst the idea of contact with nature to enhance health will appear in other areas (for example, the media, grey literature, and the knowledge base of individuals), it was considered unfeasible to look everywhere for evidence of the idea particularly as this is an investigation into the research into action process, albeit set within a wider context. This in no way presupposes that there is any linear relationships in this process as those working within the evidence based policy field might assume. The starting point for the empirical research in this study is the research literature and then government policy is examined in light of those findings. Similarly the appearance of the idea of contact with nature to enhance health in organisational use, confined to the area of Greater Manchester, is informed by the

first two figurations. The order of the three studies was not chosen because there was an assumed direction of travel of the idea. The order was chosen because the researcher had observed that the empirical evidence to support the idea, that is to say the research literature, seemed to pre-date the appearance in contemporary policy and organisational use. Thus it was more logical to start with the empirical evidence relating to the idea so that the researcher was more fully equipped to recognise its appearance in the other two figurations.

5.5 Research methods

Across the three sub-studies there were two main methods employed to answer the research questions, namely bibliometrics and content analysis, and both generated qualitative and quantitative data. Some fieldwork was also undertaken for Sub-study 3 (see Section 5.9). Each method will be described in this chapter in general terms because the description of what was done appears as a detailed method section within each study (see Chapter 6, Section 6.2; Chapter 7, Section 7.2; and Chapter 8, Section 8.2). Table 5.1 shows for each of the three studies the questions addressed, methods used and type of data generated.

Table 5.1 Overview of questions addressed, methods used and type of data generated

Study title	Questions addressed	Methods used	Data type generated
Sub-study 1 - The emergence and framing of the idea of contact with nature to enhance health in the research literature.	When did the empirical evidence first emerge? What has been the number of publications per year? Where has the empirical evidence been published? Who, in the research figuration, are the key actors producing the empirical evidence? What is the most frequently cited empirically based evidence? How has the idea been framed in the research literature?	Bibliometrics	Quantitative and qualitative
Sub-study 2 - The emergence and framing of the idea of contact with nature to enhance health in the contemporary policy literature of England.	When does the idea emerge in contemporary policy and to what extent does the idea appear? How have policy makers framed the idea in contemporary policy? How does this vary across the different government departments?	Content analysis	Quantitative and qualitative
Sub-study 3 - The appearance and framing of the idea of contact with nature to enhance health in organisations in Greater Manchester.	What types of organisations are using the idea of contact with nature to enhance health in their work? What are the different types of activity? How and in what ways is the idea revealed by these organisations?	Content analysis and fieldwork	Quantitative and qualitative

5.6 Bibliometrics

Early studies using citation analysis date from the 1920s (for example Hulme, 1923; Gross & Gross, 1927) and pre-date the development of the Science Citation Index, a database conceived of by Eugene Garfield in the 1950s, and produced in 1961 by the Institute for Scientific Information (now Thomson Reuters) (Pendlebury, 2010). Later, in 1969, Pritchard coined the term 'bibliometrics'.

Bibliometrics is "an empirical branch of the social studies of science" (Grbić, 2013, p.20). The aim of bibliometric research is to "analyze, quantify and measure communication phenomena" (De Bellis, 2009, p. 3). Borgman (1990) identified that the method is employed to answer research questions relating to scholarly

communities, the growth of scientific fields, the importance and influence of authors, and of particular relevance to this thesis, the diffusion of ideas within and across disciplines. Similarly De Bellis (2009), who also identifies the various ways bibliometrics has been employed, notes that historians and sociologists use the method in order to follow the winding pathways of ideas in their historical development.

Recently, Bouchard, Albertini, Batista and de Montigny (2015) used the method to study research production on health inequalities followed by a content analysis of the papers that were most cited. Other examples include the diffusion of the concept of 'knowledge work' in which Timonen and Paloheimo (2008) used 273 articles from the period 1974 to 2003 to identify three periods of diffusion. As referred to in Chapter 3, Estabrooks et al. (2008) undertook, using bibliometric analysis, a longitudinal study between the dates 1945 to 2004 of the knowledge utilisation field or to quote from one of the headings in their article "the diffusion of diffusion" (p.15). McNeill (2006) used bibliometrics to track how three ideas – 'the informal sector', 'sustainable development' and 'social capital' diffused through the academic, policy, and popular realms (newspapers, magazines, and World Bank and United Nations publications) from 1972 to 2002. D'Auria (1994) used bibliometrics to identify emerging researcher networks, from 1976 to 1990, in the subfield of maternal and child health nursing, and Reid (1993) used bibliometrics to research the diffusion of ideas about contemporary terrorism.

Bibliometric methods do not appear to have been used in Eliasian figurational research. The method was chosen for its potential to reveal the breadth and depth of emerging figurations of researchers over time. In Sub-study 1 bibliometrics was used to examine the patterns in authorship, including citations, and the date and rate of publication of the empirical research literature relating to the idea of contact with nature to enhance health. Textual content was also examined which is a further technique used in bibliometric research (D'Auria, 2006).

5.7 Content analysis

Content analysis has a long history of use: its origins lie in mass communication and journalism (Stone, Dunphy, Smith & Ogilvie, 1966). Content analysis is about the "generation, flow, and impact of messages" (Neuendorf, 2002, p. xvi) and is defined as "a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use" (Krippendorff, 2013, p.24). Analysing the content of texts such as that contained within policy documents and information on websites can be used to study figurations as content changes over time and is framed in different ways to suit people's purposes.

Older definitions (for example Berelson, 1952; Holsti, 1969) emphasise the objective and systematic nature of content analysis. Bryman (2008) argues that this is because the method is grounded in the quantitative research tradition and notes that one of the advantages of this method is that researchers are able to track changes in frequency over time. An example of quantitative content analysis used in diffusion of innovation research in the discipline of communications studies is by Hogg, Lomicky and Hossain (2008) who examined 994 articles in the national media and found that 'blogs' were first mentioned in 2000. The incidence increased every year until 2004 when the rate slowed. In Sub-study 2 of this thesis the frequency of the appearance of the idea of contact with nature to enhance health in policy documents was tracked between 1996 and 2012.

Not all content analysis is quantitative in nature; the method can be used with either quantitative or qualitative data depending on the purpose of the investigation (Elo & Kyngäs, 2008). In writing about the qualitative content analysis process Elo and Kyngäs (2008) found 389 public health articles, when searching the CINAHL (Cumulative Index of Nursing and Allied Health Literature) database, which had 'content analysis' as a keyword. Thus the method is evident in the public health literature.

Graneheim and Lundman (2004) having usefully analysed the literature on content analysis discuss the different concepts found in the literature. So for example whereas quantitative content analysis tends to deal with manifest content and is concerned with counting the obvious and visible aspects of the text, qualitative

content analysis deals with the latent content such as the underpinning meaning and its interpretation; the essential feature of both approaches is that the text is condensed into smaller categories. Krippendorff (2013) describes a category as content that shares a commonality; categories should be both mutually exclusive, and exhaustive.

For the qualitative analysis in Sub-study 2 and Sub-study 3 an inductive approach was taken in that the categories were derived from the data and not predetermined (Elo & Kyngäs, 2008). Phrases and paragraphs, drawn from policy documents and the websites of organisations, were read many times and annotated, in this way the researcher became immersed in the data before the categories were generated, a process known as abstraction (Polit & Beck, 2004). Dey (1993) has drawn attention to the challenge of devising categories that are both empirically and conceptually grounded. The overall aim of generating categories is to create a way of describing the phenomenon under investigation and to facilitate an understanding of the phenomenon (Cavanagh, 1997). Categorizing phenomena in this way can illustrate how the idea was 'framed' in the research literature and policy documents, which in turn can facilitate an understanding of how research is filtered and interpreted within figurations.

Following the generation of categories overarching themes were developed. Themes are a higher level of categorisation of the entire data. Graneheim and Lundman (2004) define a theme as "a thread of an underlying meaning through, condensed meaning units, codes or categories, on an interpretative level. A theme can be seen as an expression of the latent content of the text" (p.107).

5.8 Presenting the results

Case study methodology can create large quantities of data, which was the case with Sub-studies 1, 2, and 3. The purpose of the study guided the data analysis. The data analysis was detailed, used reiterative techniques as detailed above in Section 5.7, and was informed by a figurational perspective. The analysis was supported by other techniques such as the use of arrays to display the data, the tabulation of the frequency of events and the ordering of information (Miles & Huberman, 1984). Specifically, graphs, charts, tables and two commentaries were used to illustrate the

results. Further details are given in Sub-study 1 (Chapter 6), Sub-study 2 (Chapter 7), and Sub-study 3 (Chapter 8).

5.9 Fieldwork and ethical considerations

Ethical permission for this research was granted from the Faculty of Life Sciences Research Ethics Committee at the University of Chester on 2 October 2013 (see Appendix A). Permission was sought to approach organisational representatives. Two representatives were contacted and the discussions formed the basis of the commentaries that appear in Sub-study 3 (see Box 8.1 and 8.2 of Chapter 8); these have been included with the full permission of the organisational representatives who remain anonymous.

Other personal contact took the form of telephone enquiries as part of the search strategy to identify contact with nature activities (see Appendix K). These enquiries were invariably to check details about organisational boundaries or the way the organisation was configured. Further fieldwork involved undertaking visits to public places or events with the aim of noting or observing contact with nature activities; these are documented in Sub-study 3. These visits were sensitizing behaviours in that they formed a backcloth for the later analysis.

Chapter 6: Sub-study 1 - The emergence and framing of the idea of contact with nature to enhance health in the research literature

6.1 Introduction

The aim of Sub-study 1 was to explore the emergence and framing of the idea of contact with nature to enhance health in the research literature. The purpose in so doing was first, to describe the pattern of research published over the long term and, second, to study the ways in which the idea had been studied within developing research figurations. Overall this sub-study provides an illustration of the expanding evidence base relating to contact with nature to enhance health on which policy makers and organisations can draw. More specifically, the findings from Sub-study 1 were used to inform Sub-study 2 by providing a framework of sensitizing concepts for examining the content of policy documents. This allowed an understanding to be developed of the way in which those in policy making figurations became independent with those in the research figurations and, inter alia, the generation of 'evidence based policy' across different government departments.

In order to achieve this aim and purposes, the following questions were addressed:

- When did the empirical evidence first emerge?
- What has been the number of publications per year?
- Where has the empirical evidence been published?
- Who, in the research figuration, are the key actors producing the empirical evidence?
- What is the most frequently cited empirically based evidence?
- How has the idea been framed in the research literature?

Sub-study 1 was undertaken through a bibliometric analysis. Bibliometrics offers the potential to describe and understand patterns of diffusion, over the long term, in

relation to published research and was used in this study for these reasons (see Chapter 5, Section 5.6 for a discussion about bibliometric analysis).

6.2 Bibliometric method

A search of the literature relating to the health and well-being benefits of contact with nature was conducted on 17th November 2012. A search syntax was used in the Web of Science database to retrieve relevant articles (see Appendix B). Web of Science is an online scientific citation indexing system of research covering data, books, journals, proceedings and patents (Thompson Reuters, 2014). Web of Science was chosen because the database spans the sciences, arts and humanities from the 1970s onwards. The advanced search undertaken was a 'Topic' search using 'All' databases, 'All' years and 'Lemmatization'. Lemmatization allows different forms of a word to be analysed as a single item for example, the word 'garden' may appear as 'garden', 'gardens', 'gardened', 'gardening'. The selection of the 'All' years category ensured that the search went back as far as 1970.

The syntax was taken from a report by Croucher, Myers and Bretherton (2007, p.43) in which the authors undertook a critical literature review of the links between green space and health. The syntax combined words for health/wellbeing and words for nature/green space (see Appendix B). The complex syntax was used as the search strategy for Sub-study 1 because it was comprehensive and considered to be robust by Bowler, Knight and Pullin (2009). Bowler et al. (2009) examined the quality of 77 literature reviews on nature and health and assessed the utility of the reviews as tools to inform the development of evidence based policy. Of the 77 literature reviews only nine met all of their appraisal criteria; Croucher et al.'s was one such review (see Appendix C).

The literature search relating to the health and wellbeing benefits of contact with nature on 17th November 2012 generated 1,368 results which included all publications with any of the search words in the title, abstract or key words. All results were then reviewed, using the title, abstract and key words. Pertinent publications, that is, those directly relevant to the idea of contact with nature to enhance health, were then selected. This process was also undertaken independently by a second researcher who was familiar with the literature on the health and

wellbeing benefits of contact with nature. The first and second researchers compared their selections. The researchers only differed in their selections on two published articles and following discussion agreed their inclusion. A total of 269 articles were selected using this manual filtering process; these were all in the English language.

Next, for each of the 269 publications a full bibliographic record was exported from the Web of Science database. The full bibliographic record included the author(s), journal, publication type, title, keywords, full abstract, and affiliation of authors, funding organization, publication year, and the full list of cited references. These data were exported in a text file (.txt) format and then imported into Bibexcel (Persson, 2011) for analysis. Bibexcel is bibliometric software. It is used to analyze bibliographic data to find patterns in frequencies and citations. It is a tool for analyzing raw bibliometric data from the Web of Science database (and Scopus but with a restricted set of options). Bibexcel works from excel files taken directly from a Web of Science search query. The text (.txt) file exported comprised the full bibliographic records coded in a continuous string of symbols, letters, characters and numbers. In Bibexcel the text (.txt) file was converted into a document file. The document file (.doc) was the same data converted into a legible format. As part of the Bibexcel software process an identifier is attached to each of the 269 publications imported from the Web of Science and an identifier is also attached to every cited reference within each publication.

The next stage was to extract an out file (.out) from the document file (.doc). An out file (.out) is an extract of the document (.doc) file and lists all the cited references but does not include any duplicates. The out file (.out) was a list of 8,711 cited references. This list is the total body of material, about the topic ‘contact with nature to enhance health’ referred to by, and including the work of, the authors of the 269 articles from the Web of Science search.

A disadvantage of the Bibexcel software in arriving at this list is that the software did not recognise different formatting of the same reference. For example if the word ‘Journal’ (formatted in lower case) appeared in a reference but appeared as ‘JOURNAL’ (formatted in upper case) in the same reference listed elsewhere then the software treats these as two separate references whereas they are actually the

same reference but formatted differently. To avoid the miscounting of the 8,711 cited references the data in the out file (.out) was imported into Excel, formatted manually, and then returned to Bibexcel. In other words minor discrepancies in formatting were corrected to ensure the data were reliable.

Next a frequency file (.cit) was created. This file, based on the out file (.out), provides a frequency count for each of the 8,711 cited references. The frequency file (.cit) was a total of 12,513 cited references. The total was greater than the 8,711 cited references in the out file (out.doc) because duplicates were used in the frequency count. From the out file (.out) and from the frequency file (.cit) a range of other files were created in Excel. These are listed in Box 6.1 which summarises the stages of the bibliometric analysis and are explained more fully in Table 6.1.

Whilst many publications have co-authors, the calculations in excel files Aggr_CitRef1 and Aggr_CitRef2 to show *Who, in the research figuration, are the key actors producing the empirical evidence?* (see Table 6.1) were based on lead author data only. In most disciplines, the lead author is normally perceived as having made the greatest contribution to the article (Tscharntke, Hochberg, Rand, Resh & Krauss, 2007). Creating files from the cited references for all authors was considered to be impractical because the data set would have been extremely large and the analysis time consuming.

Box 6.1 A summary of the stages of the bibliometric analysis

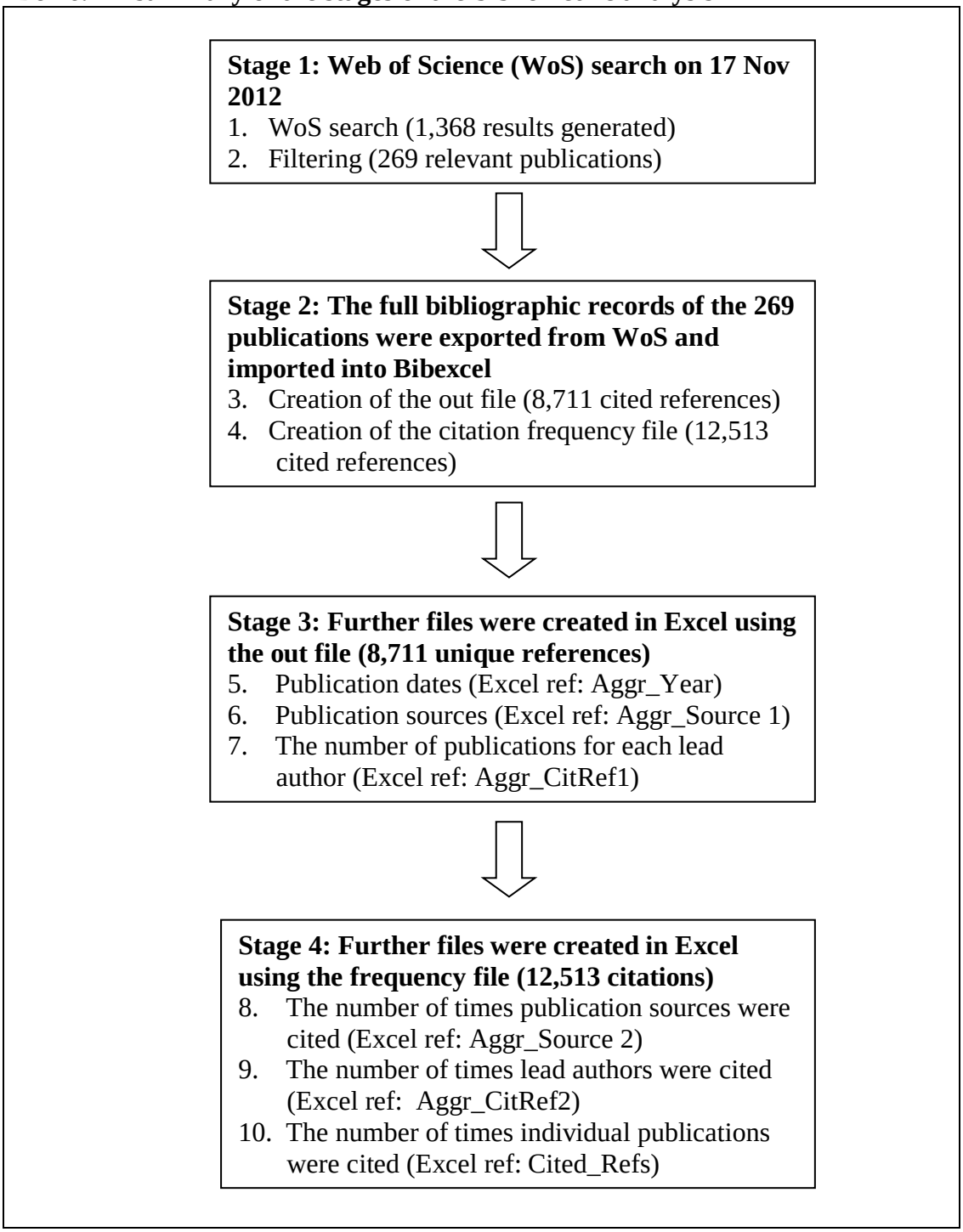


Table 6.1 Summary of Excel spreadsheet information

Excel file tab reference	Explanation	Data used to answer the question:
Aggr_Year	This shows the date of publication of the 8,711 cited references and the count (aggregation) for each year. There was no date for 138 of the cited references so the total used was 8,711 minus 138 which equals 8,573.	When did the empirical evidence first emerge? What has been the number of publications per year?
Aggr_Source1	This lists the publication source, for example, journal, report, or book. There were 4,124 entries in this file not 8,711 because there were multiple publications for individual journal titles. The count (aggregation) is the number of times each publication source appeared. For example, LANDSCAPE URBAN PLAN appeared 181 times in the list of 8,711 cited references.	Where has the empirical evidence been published?
Aggr_Source2	This shows how many times each publication source was cited thus revealing the most frequently cited publication source. The list of 12,513 cited references was required for this calculation, that is, all the duplicates were used. For example, the publications from AM J PREV MED have been cited 481 times.	Where has the empirical evidence been published?
Aggr_CitRef1	Aggr_CitRef1 is the count of times that each author appeared as a lead author in the list of 8,711 references. This shows that a particular lead author appeared X times in the list and revealed the lead author with the most publications. For example, Ulrich appears 36 times in the list of 8,711 cited references.	Who, in the research figuration, are the key actors producing the empirical evidence?
Aggr_CitRef2	Aggr_CitRef2 shows how many times each lead author was cited thus revealing the most cited lead author. The list of 12,513 references was used for this calculation, that is, all the duplicates were used. For example, Ulrich's papers have been cited 167 times.	Who, in the research figuration, are the key actors producing the empirical evidence?
Cited_Refs	This shows the most frequently cited publications.	What is the most frequently cited empirical based evidence?

6.3 Results

To answer the question *When did the empirical evidence first emerge?* information from the excel spreadsheet tab name Aggr_Year is presented below in Table 6.2. The data set totals 8,573 and not 8,711 (the number of cited references in the out file) because 138 of the entries had no date. Of the 8,573 publications 5,562 (65%) are journal articles.

Table 6.2 The year of publication of each of the cited references, the number of publications per year and the cumulative total between 1817 and 17 November 2012

Year of publication	No. of publications	Cumulative total		Year of publication	No. of publications	Cumulative total		Year of publication	No. of publications	Cumulative total
1817	1	1		1953	2	46		1983	48	443
1839	1	2		1954	1	47		1984	48	491
1847	1	3		1955	4	51		1985	58	549
1853	1	4		1956	1	52		1986	62	611
1861	1	5		1957	3	55		1987	69	680
1865	1	6		1958	2	57		1988	73	753
1870	1	7		1959	2	59		1989	90	843
1873	1	8		1960	6	65		1990	106	949
1881	2	10		1961	5	70		1991	128	1,077
1892	1	11		1962	2	72		1992	137	1,214
1897	1	12		1963	2	74		1993	144	1,358
1901	1	13		1964	3	77		1994	176	1,534
1902	1	14		1965	5	82		1995	229	1,763
1908	1	15		1966	2	84		1996	228	1,991
1909	2	17		1967	7	91		1997	298	2,289
1921	1	18		1968	6	97		1998	301	2,590
1927	1	19		1969	6	103		1999	304	2,894
1930	2	21		1970	9	112		2000	426	3,320
1934	2	23		1971	12	124		2001	432	3,752
1935	2	25		1972	13	137		2002	485	4,237
1937	2	27		1973	12	149		2003	528	4,765
1938	2	29		1974	10	159		2004	610	5,375
1941	1	30		1975	13	172		2005	640	6,015
1942	2	32		1976	24	196		2006	604	6,619
1946	2	34		1977	31	227		2007	615	7,234
1948	4	38		1978	27	254		2008	516	7,750
1949	2	40		1979	27	281		2009	404	8,154
1950	1	41		1980	44	325		2010	285	8,439
1951	2	43		1981	36	361		2011	124	8,563
1952	1	44		1982	34	395		2012 *	10	8,573
* Search date 17 November 2012[1]								**Total**	**8,573**	**8,573**

[1] Recently published material would not yet be on the Web of Science database

The first publication, dated 1817, is the 3rd Annual Report of the Glasgow Royal Asylum for Lunatics. Provided in Table 6.3 are illustrative examples of other early publications from 1839, 1853, 1865, 1870, 1901, 1902 and 1960.

Table 6.3 Illustrative examples of early (pre-1970) publications relating to the topic contact with nature to enhance health

1817 - earliest reference
Glasgow Royal Asylum for Lunatics. (1817). *Glasgow Royal Asylum for Lunatics 3rd Annual Report.*

1839 - second earliest reference
Murray, J.F. (1839). The lungs of London. In *Blackwood's Edinburgh Magazine* (pp.212-227). Edinburgh: William Blackwood and Sons.

1853 - first journal article
Thurnam, J. (1853). Acreage of land attached to the county asylums. *Asylum Journal of Insanity, 1*(7).

1865 - early report
Olmsted, F.L. (1865). *The value and care of parks*. Report to the Congress of the State of California.

1870 - first book
Warner, C.D. (1870). *My summer in a garden.* Boston: James R. Osgood & Co., Ltd.

1901 - second book
Muir, J. (1901). *Our national parks.* Boston: Houghton, Mifflin.

1902 - third book
Howard, E. (1902). *Garden cities of to-morrow*. London: S. Sonnenschein & Co., Ltd.

1960 - example of the use of the idea in psychiatry
Searles, H.F. (1960). *The non-human environment in normal development and schizophrenia.* New York: International Universities Press.

The information presented in Table 6.2 also addresses the question *What has been the number of publications per year?* The table shows that for the period 1817 to 1946 (129 years) there were a total of 34 publications, and for many years during this period there were no publications. From 1948 onwards there are small numbers of publications, every year with a gradual increase until 1970. From 1971 onwards the annual number of publications is in double figures and the increase is exponential, that is to say, doubles or more than doubles each decade, with a peak in 2005 at 640 publications. From 2005 the annual number steadily declines with only 124 in 2011 and 10 in 2012 up to 17th November (an incomplete year).

The number of publications per year from 1971 onwards, when the number of publications per year started to increase, is illustrated in Figure 6.1. A second graph (Figure 6.2) shows the same data set plotted as cumulative totals, that is to say, the total number of publications year on year. Figure 6.2 is a classic S-shaped diffusion curve. This analysis gives an insight into the ways in which the figuration of researchers was expanding alongside its activity in terms of production of publications.

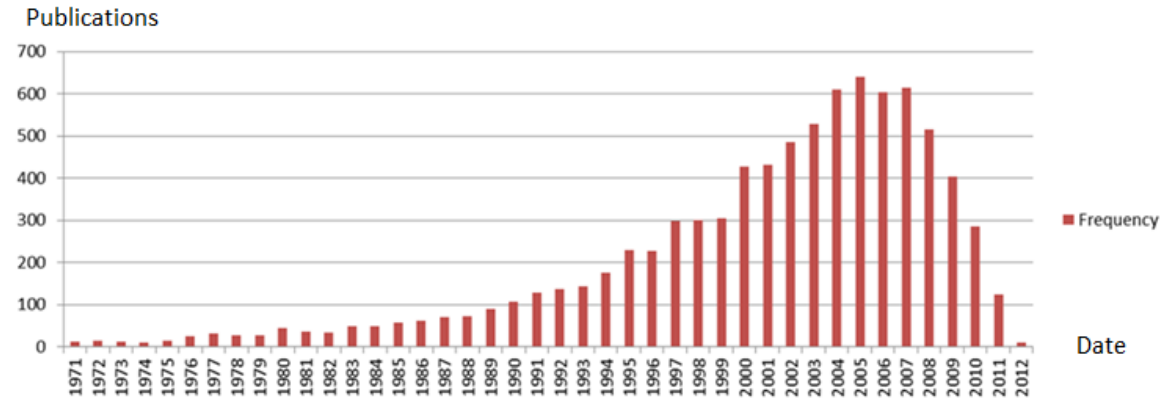
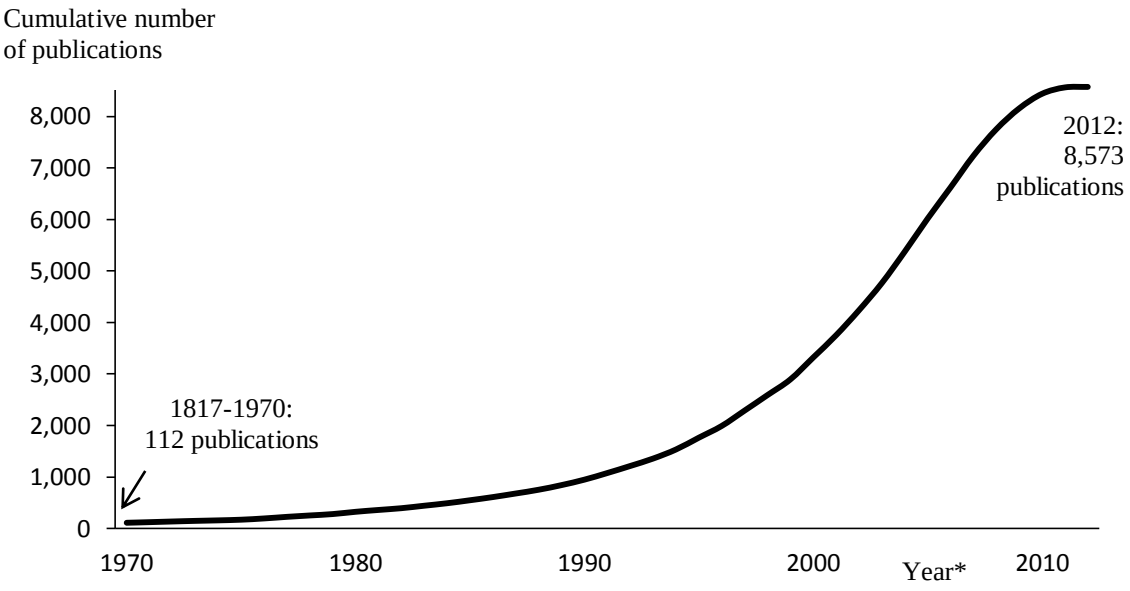


Figure 6.1 Frequency of publications between 1971 and 17 November 2012



*2012 is an incomplete year

Figure 6.2 An S-shaped diffusion curve showing the cumulative number of publications per year from 1971 onwards

To allow some insight to be gained in terms of the 'audiences' or figurations that were receptive to research relating to the idea of contact with nature to enhance health, the question *Where has the empirical evidence been published?* was addressed. Information from the Excel spreadsheet tab name Aggr_Source1 and Aggr_Source2 is presented below in Table 6.4. Table 6.4 shows the top 38 publication sources (these are all journals) ranked according to the number of times the journal title appeared in the list of 8,711 cited references (see Column A). The 38 journals account for 25% (2,143) of the 8,711 cited references. The top publication source, appearing 181 times, is the journal Landscape and Urban Planning, established in April 1985 (shaded in pink in Table 6.4). This is an international journal that advances sustainable landscape science, planning and design to "provide mutually supportive outcomes for people and nature" (Landscape and Urban Planning, 2014a, no page number).

Table 6.4 also shows the frequency of journal title in all citations, that is to say, the most frequently cited publication source (see Column B). The number of citations for each of the 38 journals account for 37.5% (4,697) of the 12,531 citations. The most frequently cited publication source is the American Journal of Preventive Medicine, which is cited 481 times (shaded in green in Table 6.4). The first issue of this journal was in January 1998. An aim of this journal is to disseminate research, teaching, practice and policy relating to the prevention of disease and the promotion of individual and community health (American Journal of Preventive Medicine, 2014a). This suggests diffusion of the idea amongst figurations of people interested in public health.

In total there were 4,124 publication sources of which there were 1,576 different journal titles. From amongst the journals, 80% (7,742) of the citations came from 20.5% (324) of the journals cited. This follows Chung's law of scattering in which 80% of the citations come from about 20% of the journals cited, identifying a core list for a local journal collection (Chung, 2007). There was a core group of actors (represented by journals) with particular interests in publishing research on contact with nature to enhance health. Overall the figuration was diverse and broad with many journals on the periphery of the figuration.

Table 6.4 The top 38 publication sources (all journals) ranked according to the number of times the publication source appeared in the list of 8,711 cited references

Position	Publication source[1]	Column A	Column B
		Frequency of publication source in the 8,711 cited references[2]	Frequency of publication source in the 12,513 cited references[3]
1	LANDSCAPE URBAN PLAN	181	328
2	AM J PREV MED	152	481
3	AM J PUBLIC HEALTH	119	285
4	ENVIRON BEHAV	113	357
5=	J EPIDEMIOL COMMUN H	107	338
5=	SOC SCI MED	107	242
7	J ENVIRON PSYCHOL	103	342
8	HEALTH PLACE	99	241
9	PREV MED	88	215
10	J LEISURE RES	69	99
11=	J PHYS ACT HEALTH	68	109
11=	MED SCI SPORT EXER	68	129
13	LEISURE SCI	62	140
14	AM J EPIDEMIOL	61	75
15	LANCET	55	112
16	INT J BEHAV NUTR PHY	52	74
17	AM J HEALTH PROMOT	50	116
18	JAMA-J AM MED ASSOC	48	70
19	BRIT MED J	42	55
20	ENVIRON HEALTH PERSP	38	41
21	PEDIATRICS	35	67
22	ECOL ECON	33	40
23=	INT J EPIDEMIOL	31	40
23=	J AM DIET ASSOC	31	37
25	ENVIRON PLANN A	28	89
26=	HEALTH PROMOT INT	27	63
26=	SCIENCE	27	67
28=	J PERS SOC PSYCHOL	25	34
28=	J ARBORICULTURE	25	29
28=	URBAN FORESTRY URBAN GR	25	81
31=	HORTTECHNOLOGY	23	30
31=	J URBAN HEALTH	23	36
33=	BMC PUBLIC HEALTH	22	57
33=	CAN J PUBLIC HEALTH	22	23
33=	PREV CHRONIC DIS	22	24
36=	ANN BEHAV MED	21	62
36=	URBAN STUD	21	34
38	HEALTH PSYCHOL	20	35
	Total	2,143	4,697

[1] Using Institute for Scientific Information (ISI) journal title abbreviations
[2] Unique references; does not include duplicates [3] Includes duplicates

To further explore the figuration relating to the publication of the empirical evidence, in particular to show the extent of interest in the idea of contact with nature to enhance health amongst different academic disciplines, a classification of all the journals cited two or more times was undertaken. There were 806 such journals from a total of 1,576 journal titles, accounting for 8,907 (71%) of the total number of citations. The journal titles of the 'long tail' of 770 journals cited only once were not used in the classification for several reasons: i) the obscurity of some of the citations leading to classification difficulties, ii) the use of languages other than English, and iii) the size of data set (770) given the relative number of citations (29%). However, the long tail does give some indication of the extent of the figuration.

The first part of the thematic classification process was to assign manually the top 38 journals to one of four broad academic fields. The journals within each broad academic field were then assigned to a sub-category (see Table 6.5). The assigning of both academic fields and sub-categories was based on journal titles and information given on each journal website about the nature of the work the journal represented and who the journal was targeted at. The fields used in the classification were:

Field 1: Environment and Geography
Field 2: Public Health and Medicine
Field 3: Psychology
Field 4: Leisure

Using this initial classification system the remainder of the 806 journals were then classified by assigning them to academic fields and sub-categories. During this process it was necessary to create one further academic field headed 'Other' to capture the variety of academic fields evident but each with relatively few citations. The academic field 'Leisure' was then subsumed into the 'Other' heading because in the final analysis the leisure journals only accounted for 1% (8) of the total number of journals and 3.1% (280) of the citations even though the Journal of Leisure Research and the journal Leisure Science appeared in the list of 38 top journals. The final academic fields and sub-categories for the top 38 journals are shown in Table 6.5. Table 6.6 provides summary data for the 806 journals that were classified.

Table 6.5 Academic fields and sub-categories for the top 38 journals

Position	Journal[1]	Academic field	Sub-category
1	LANDSCAPE URBAN PLAN	Environment and Geography	Urban Planning
2	AM J PREV MED	Public Health and Medicine	Prevention
3	AM J PUBLIC HEALTH	Public Health and Medicine	Public Health
4	ENVIRON BEHAV	Psychology	Behavioural Psychology
5=	J EPIDEMIOL COMMUN H	Public Health and Medicine	Public Health
5=	SOC SCI MED	Public Health and Medicine	Sociology of Health
7	J ENVIRON PSYCHOL	Psychology	Environmental
8	HEALTH PLACE	Public Health and Medicine	Public Health
9	PREV MED	Public Health and Medicine	Public Health
10	J LEISURE RES	Other	Leisure
11=	J PHYS ACT HEALTH	Public Health and Medicine	Prevention
11=	MED SCI SPORT EXER	Public Health and Medicine	Sport and Exercise
13	LEISURE SCI	Other	Leisure
14	AM J EPIDEMIOL	Public Health and Medicine	Public Health
15	LANCET	Public Health and Medicine	Medicine
16	INT J BEHAV NUTR PHY	Public Health and Medicine	Nutrition
17	AM J HEALTH PROMOT	Public Health and Medicine	Public Health
18	JAMA-J AM MED ASSOC	Public Health and Medicine	Medicine
19	BRIT MED J	Public Health and Medicine	Medicine
20	ENVIRON HEALTH PERSP	Public Health and Medicine	Environ' Health
21	PEDIATRICS	Public Health and Medicine	Medicine
22	ECOL ECON	Environment and Geography	Ecology
23=	INT J EPIDEMIOL	Public Health and Medicine	Public Health
23=	J AM DIET ASSOC	Public Health and Medicine	Nutrition
25	ENVIRON PLANN A	Environment and Geography	Urban Planning
26=	HEALTH PROMOT INT	Public Health and Medicine	Health Promotion
26=	SCIENCE	Other	Science
28=	J PERS SOC PSYCHOL	Psychology	Social Psychology
28=	J ARBORICULTURE	Environment and Geography	Forestry
28=	URBAN FORESTRY URBAN GR	Environment and Geography	Forestry
31=	HORTTECHNOLOGY	Environment and Geography	Horticulture
31=	J URBAN HEALTH	Public Health and Medicine	Public Health
33=	BMC PUBLIC HEALTH	Public Health and Medicine	Public Health
33=	CAN J PUBLIC HEALTH	Public Health and Medicine	Public Health
33=	PREV CHRONIC DIS	Public Health and Medicine	Public Health
36=	ANN BEHAV MED	Public Health and Medicine	Behavioural Medicine
36=	URBAN STUD	Environment and Geography	Urban Studies
38	HEALH PSYCHOL	Psychology	Health Psychology

[1] Using ISI journal title abbreviations

Table 6.6 Summary data of the classification of the 806 journals that were cited twice or more

Academic field with sub-category examples	Number of journals	Journals (%)	No. citations	Citations (%)
Environment and Geography (Sub-categories incl. Ecology, Urban Planning, Urban Studies, Horticulture, Forestry)	272	34	2,285	26
Public Health and Medicine (Sub-categories incl. Prevention, Health Promotion, Mental Health, Epidemiology, Nutrition, Sport and Exercise, Clinical Medicine, Behavioural Medicine, Sociology of Health, Environmental Health)	247	30	4,377	49
Psychology (Sub-categories incl. Behavioural Psychology, Sport Psychology, Health Psychology, Social Psychology)	97	12	1,275	14
Other (Sub-categories incl. Leisure, Tourism, Education, Early Years, Science, Social Science, Research Methods)	190	24	970	11
Total	806	100%	8,907	100%

Table 6.6 shows that of the journals cited two or more times, the greatest number was from the Environment and Geography academic field. The number of journals for this field was 272 (34%). The Public Health and Medicine academic field had slightly fewer journals at 247 (30%) but substantially more citations, that is, 4,377 (49%) compared to 2,285 (26%) for Environment and Geography. Psychology had the fewest journals at 97 (12%). The 'Other' field accounted for 190 (24%) of journals catering for a range of academic disciplinary groups but citations only totalled 970 (11%).

To answer the question *Who, in the research figuration, are the key actors producing the empirical evidence?* information from the Excel spreadsheet was used in two ways: i) to show the lead author with the highest number of publications, that is to say, the most productive lead author (Excel reference: Aggr_CitRef1), and ii) to show the most frequently cited lead author (Excel reference: Aggr_CitRef2) which rather than indicating productivity indicates influence. Table 6.7 shows the 25 lead authors with the highest number of publications; these account for 415 (4.8%) of the 8,711 references. Table 6.8 shows the top 25 most frequently cited lead authors and brief biographical data about each one. The citations account for 14% (1,735) of the

12,513 citations. Together these two tables show that the five most productive lead authors, that is, Sallis, Ulrich, Hartig, Kaplan (R) and Giles-Corti are also the 5 most frequently cited lead authors although their 1-5 positions are different. Further, a total of 15 names appear in both tables which indicates that many of the lead authors that are publishing frequently are also cited frequently.

Table 6.7 The 25 lead authors with the greatest number of publications

Position	Name	Number of publications as lead author
1	Sallis JF	37
2	Ulrich RS	36
3	Hartig T	28
4	Kaplan R	23
5	Giles-Corti B	19
6=	de Vries S	17
6=	Korpela K	17
6=	MacIntrye S	17
9	Herzog TR	16
10=	Cohen DA	15
10=	Frank LD	15
10=	Kaplan S	15
13	Pretty JN	14
14=	Evans GW	13
14=	Ewing R	13
14=	Frumkin H	13
14=	McKenzie TL	13
18=	Godbey G	12
18=	Henderson KA	12
18=	Kawachi I	12
18=	King AC	12
18=	McPherson EG	12
18=	Van den Berg AE	12
24=	Bauman A	11
24=	Gobster PH	11
	Total	415

The biographical employment data of the 25 most frequently cited lead authors was retrieved from an internet search on 28th May 2014. The biographical employment data shows employing organisation, the country of location and position within the organisation (see Table 6.8). This information has been used to create Figure 6.3 which shows where the 25 most cited lead authors were located. Of the 25 most frequently cited lead authors three were located in the UK these are Mitchell, Pretty and Macintyre. Table 6.8 also shows the academic field of the lead authors; the same

classification system as for the journals was applied. The totals are given in Table 6.9 which shows that most of the lead authors were from the Public Health and Medicine academic field.

Table 6.8 The 25 most frequently cited lead authors (across multiple publications) together with biographical employment information about the author

Position	Name	Number of citations	Biographical employment information	Academic field
1	Ulrich R S	167	Professor of Architecture, Center for Healthcare Building Research, Chalmers University of Technology, Sweden. http://www.healthdesign.org/chd/about/board-directors/roger-s-ulrich-phd-edac	Other
2	Hartig T	133	Professor of Environmental Psychology, Uppsala University, Sweden. http://www2.ibf.uu.se/PERSON/terry/cv.html	Psychology
3	Kaplan R	127	Professor of Environment and Behaviour, University of Michigan, US. http://www.snre.umich.edu/profile/rkaplan	Psychology
4	Giles-Corti B	121	Adjunct Professor, School of Population Health, The University of Western Australia. http://www.uwa.edu.au/people/billie.giles-corti	Public Health and Medicine
5	Sallis JF	118	Professor of Family and Preventative Medicine, University of California, US. http://sallis.ucsd.edu/index.html	Public Health and Medicine
6	Maas J	101	Researcher, Netherlands Institute for Health Services Research, Netherlands. http://www.nivel.nl/en/news/green-space-key-health	Public Health and Medicine
7=	Kuo FE	79	Associate Professor and Director, Landscape and Human Health Laboratory, University of Illinois, US. http://lhhl.illinois.edu/	Environment and Geography
7=	Mitchell RC	79	Professor of Public Health, Institute of Health and Wellbeing, University of Glasgow, UK. http://www.gla.ac.uk/researchinstitutes/healthwellbeing/staff/richmitchell/	Public Health and Medicine
9=	Cohen DA	64	Senior Natural Scientist, RAND Corporation and Professor at the Pardee RAND Graduate School, California, US. http://www.rand.org/about/people/c/cohen_deborah.html	Public Health and Medicine

Position	Name	Number of citations	Biographical employment information	Academic field
9=	de Vries S	64	Senior Social Scientist, Department of Landscape and Spatial Planning, Wageningen University and Research Centre, The Netherlands. http://www.wageningenur.nl/en/Education-Programmes/PhD-Programme/Graduate-Schools/Wageningen-School-of-Social-Sciences/Research/Researchers-at-WASS/Fellows.htm	Environment and Geography
11	Kaplan, S	58	Professor of Psychology, University of Michigan, US. http://www.snre.umich.edu/eplab/people.html	Psychology
12=	Frank LD	57	Professor and Director, Health and Community Design Laboratory, School of Population and Public Health, The University of British Columbia, Canada. http://www.scarp.ubc.ca/people/larry-frank	Public Health and Medicine
12=	Humpel N	57	ARC Postdoctoral Fellow, Centre for Health Behaviour and Communication Research, University of Wollongong, New South Wales, Australia. http://media.uow.edu.au/news/2005/0519a/	Public Health and Medicine
12=	van den Berg AE	57	Professor, Department of Cultural Geography, Wagening University and Research centre, The Netherlands. http://www.narcis.nl/person/RecordID/PRS1259625	Environment and Geography
15=	Grahn P	49	Professor in Landscape Architecture, Swedish University of Agricultural Sciences, Sweden. http://www.slu.se/en/about-slu/search/search-employee/person-presentation/?emp=9030AE00DA30E31758B3F85381F04837	Environment and Geography
15=	Pretty JN	49	Professor of Environment and Society, University of Essex, UK. http://www.essex.ac.uk/bs/staff/profile.aspx?ID=1242	Environment and Geography
15=	Takano T	49	Professor of Health Promotion/International Health, Tokyo Medical and Dental University, Japan. http://www.tmd.ac.jp/med/hlth/depHP/en/brief/index.html	Public Health and Medicine
18	Saelens BE	43	Professor of Paediatrics and Psychiatry and Behavioural Sciences, Department of Pediatrics, University of Washington, Seattle, Washington, US. http://depts.washington.edu/uwgenped/directory/briansaelens	Public Health and Medicine

Position	Name	Number of citations	Biographical employment information	Academic field
19	Bedimo-Rung AL	41	Associate Professor, School of Public Health, Louisiana State University, New Orleans, Louisiana, US. https://publichealth.lsuhsc.edu/faculty_newsite/faculty_detail.aspx?name=bedimo-rung_ariane	Public Health and Medicine
20	Sugiyama T	39	Senior Research Fellow, Division of Health Sciences, School of Population Health, University of South Australia. http://www.unisanet.unisa.edu.au/staff/homepage.asp?Name=Takemi.Sugiyama	Public Health and Medicine
21	Kaczynski AT	38	Assistant Professor, Department of Health Promotion, Education and Behaviour, Arnold School of Public Health, University of South Carolina, Columbia, US. http://www.sph.sc.edu/hpeb/facultystaffdetails.php?ID=814	Public Health and Medicine
22=	Gobster PH	37	Research Social Scientist, Forest Service's North Central Research Station, United States Department of Agriculture, Chicago, US. http://www.nrs.fs.fed.us/people/gobster	Environment and Geography
22=	Macintyre S	37	Professor of Social and Public Health Sciences and Director of the Institute of Health and Wellbeing, MRC/CSO Social and Public Health Sciences Unit, University of Glasgow, UK. http://www.sphsu.mrc.ac.uk/user/details/3-Sally-Macintyre	Public Health and Medicine
24	Frumkin H	36	Professor of Environmental and Occupational Health Sciences, School of Public health, University of Washington, Seattle, Washington, US. http://deohs.washington.edu/faculty/howard-frumkin	Public Health and Medicine
25	Korpela K	35	Professor of Psychology, Department of Psychology, University of Tampere, Tampere, Finland. http://uta-fi.academia.edu/KaleviKorpela	Psychology
	Total	1,735		

Table 6.9 Classification of the lead authors

Academic field	Number of authors	Authors (%)
Public Health and Medicine	14	56
Environment and Geography	6	24
Psychology	4	16
Other (Architecture)	1	4
Total	25	100%

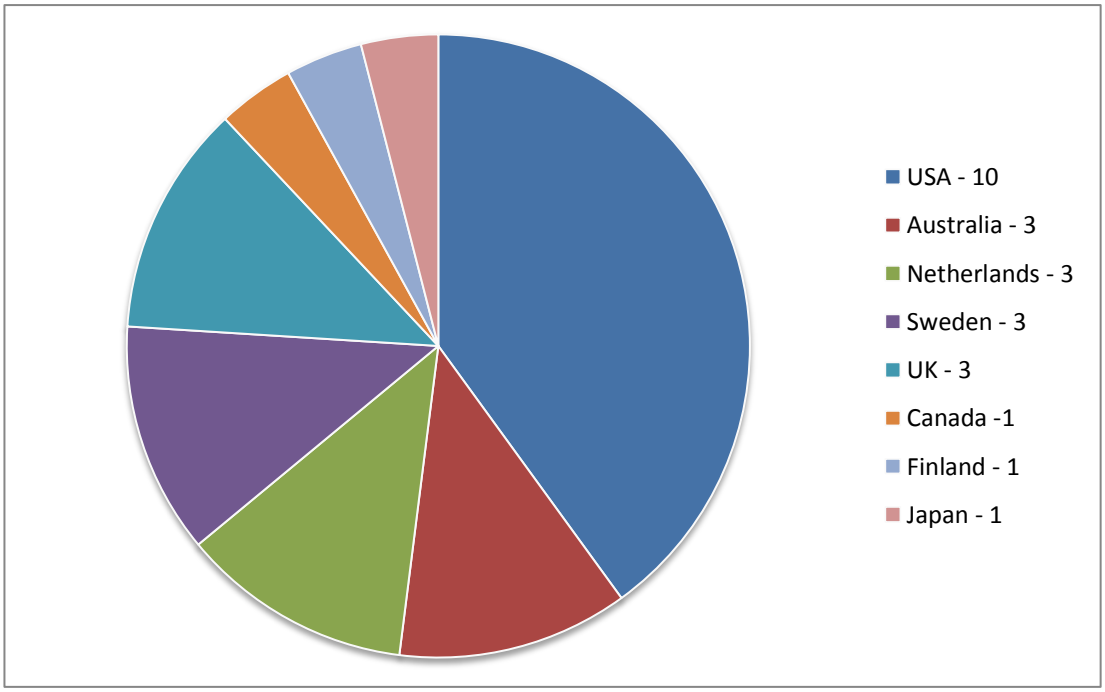


Figure 6.3 Pie chart showing where the 25 most cited lead authors were located

From Table 6.8 and in researching the biographical employment data of the 25 most frequently cited lead authors it was evident that many of the authors were employed in work units (that is to say, centres, departments, laboratories, institutes, schools) that had multi-disciplinary agendas and comprised multi-disciplinary teams. So for example, at the time the search was undertaken in May 2014, Frances Kuo was Director of The Landscape and Human Health Laboratory at the University of Illinois. The laboratory is "a multidisciplinary research laboratory dedicated to studying the connection between greenery and human health" (Landscape and Human Health Laboratory, 2014, no page number). Similarly Rich Mitchell, Professor of Public Health at the University of Glasgow works in an Institute of Health and Wellbeing with an aim to "improve population health and wellbeing and reduce inequalities in health" (Institute of Health and Wellbeing, 2014, no page number). The Institute "brings together experts from a range of disciplines across the University to pursue common themes" (Institute of Health and Wellbeing, 2014, no page number); one such theme is the environment and health. This shows that the idea was diffusing amongst figurations of people with multi-disciplinary interests.

Table 6.10 shows the top 25 most frequently cited publications and the frequency of citations for each; this answers the question *What is the most frequently cited*

empirical evidence? All the publications are journal articles except the equal second most frequently cited publication which is a collection of empirically based studies in a book format by Kaplan and Kaplan (1989). The article by Maas et al. (2006) is the most cited publication: it was cited 49 times. This is far from classical paper status which in bibliometrics is deemed to be when the number of citations exceeds 500, with citation peaks typically between five and seven years (Førsund & Sarafoglou, 2003). This indicates that the diffusion of the article at year six post publication had less 'reach' than a paper of classical status. The variety of publications reflects diffusion of the idea of contact with nature to enhance health across an array of figurations located in a variety of countries and oriented to a diverse audience of other figurations of researchers and related groups (for example, policy makers and practitioners).

To explore *How has the idea been framed in the research literature?* the publications were categorised into themes according to the content. This involved consideration of the different aspects or topic areas, relating to the idea of contact with nature to enhance health, which had been investigated by the researchers. Following the reading of the full texts of the articles, and the contents page and introduction of the one book, the publications were categorised into one of four themes:

Theme 1: Psychological Benefits
Theme 2: Physical Activity
Theme 3: Health Promotion/Community Development
Theme 4: Green Space, Health and Epidemiology

Two publications Takano (2002) and Maas (2008) crossed two of the themes so they were allocated to both Theme 2 and 4. The publications (denoted by lead author) and their assigned themes were then ordered chronologically to reveal any trends over time (see Table 6.11). The frequency of citations was also included in Table 6.11 to show any association between the number of citations and the year of publication. Table 6.11 shows that empirical research in the 1980s and 1990s was mainly concerned with the psychological benefits of contact with nature. Then in the late 1990s and early 2000s physical activity began to be a focus of interest: this theme being particularly predominant in the mid-2000s. A notable interest in studies

about green space and health at the population level appears from the mid-2000s onwards. Table 6.11 also shows that when viewed chronologically the frequency of citations does not show any particular pattern or trend. It is not the case, for example, that the older publications had more citations (one reason for this can be that they have had more time to be cited). It is noted, however, that amongst the top 25 most frequently cited publications there are no dates post-2008 which could suggest that publications between 2008 and 12th Nov 2012 (the date the search was done) have not been in circulation long enough to be very frequently cited (Pendlebury, 2010). This is termed 'citation lag'; the peak citation rate being between 4 and 10 years after publication (Hajra & Sen, 2005). This shows that the diffusion of an idea amongst multiple figurations of researchers is a lengthy process.

Table 6.10 The top 25 most frequently cited publications between 1817 and 12th Nov 2012

Position	Frequency of citation	Full reference
1	49	**Maas, J**., Verheij, R.A., Groenewegen, P.P., De Vries, S., & Spreeuwenberg, P. (2006). Green space, urbanity, and health: How strong is the relation? *Journal of Epidemiology and Community Health*, *60,* 587-592. doi:10.1186/1471-2458-8-206
2=	47	**De Vries, S**., Verheij, R.A., Groenewegen, P.P., & Spreeuwenberg, P. (2003). Natural environments - healthy environments? An exploratory analysis of the relationship between greenspace and health. *Environment and Planning A, 35*(10), 1717-1731. doi:10.1068/a35111
2=	47	**Kaplan, R**., & Kaplan, S. (1989). *The experience of nature: A psychological perspective.* Massachusetts: Cambridge University Press.
2=	47	**Takano, T**., & Nakamura, K., & Watanabe, M. (2002). Urban residential environments and senior citizens' longevity in megacity areas: The importance of walkable green spaces. *Journal of Epidemiology and Community Health, 56*, 913-918. doi:10.1136/jech.56.12.913
5	41	**Hartig, T**., Evans, G.W., Jamner, L.D., Davis, D.S., & Gärling, T. (2003). Tracking restoration in natural and urban field settings. *Journal of Environmental Psychology*, *23*,109-123. doi:10.1016/S0272-4944(02)00109-3
6=	40	**Giles-Corti, B**., Broomhall, M.H., Knuiman, M., Collins, C., Douglas, K., Ng, K., et al. (2005). Increasing walking: How important is distance to, attractiveness, and size of public open space? *American Journal of Preventive Medicine*, *28*, Supplement 2, 169-76. doi:10.1016/j.amepre.2004.10.018
6=	40	**Mitchell, R**. & Popham, F. (2008). Effect of exposure to natural environment on health inequalities: an observational population study. *Lancet, 372*, 1655-1660.
8	37	**Ulrich, R**.S. (1984). View through a window may influence recovery from surgery. *Science*, *224*(4647), 420-421. doi: 10.1126/science.6143402
9	36	**Ulrich, R**.S. (1991). Stress recovery during exposure to natural and urban environments. *Journal of Environmental Psychology, 11*, 201-230.

Position	Frequency of citation	Full reference
10=	35	**Bedimo-Rung**, A.L., Mowen, A., & Cohen, D. (2005). The significance of parks to physical activity and public health. *American Journal of Preventive Medicine, 28,* Supplement 2, 159-168. doi:10.1016/j.ampre.2004.10.024
10=	35	**Humpel, N**., Owen, N., & Leslie, E. (2002). Environmental factors associated with adults' participation in physical activity - a review. *American Journal of Preventive Medicine, 22,* 188-199.
10=	35	**Kaplan, S**. (1995). The restorative benefits of nature: Toward an integrative framework. *Journal of Environmental Psychology, 15,* 169-182.
13=	28	**Cohen, D**., McKenzie, T., Sehgal, A., Williamson, S., Golinelli, D., Lurie, N. (2007). Contribution of public parks to physical activity. *American Journal of Public Health, 97,* 509-514.
13=	28	**Hartig, T**. (1991) Restorative effects of natural environment experiences. *Environment and Behavior, 23,* 3-26. doi: 10.1177/0013916591231001
15	26	**Mitchell, R**., & Popham, F. (2007). Greenspace, urbanity and health: Relationships in England. *Journal of Epidemiological Community Health, 61,* 681-683. doi: 10.1136/jech.2006.053553
16	24	**Grahn, P**., & Stigsdotter, U. (2003) Landscape planning and stress. *Urban Forestry & Urban Greening, 2,* 1-18.
17=	23	**Pretty, J**., Peacock, J., Sellens, M., & Griffin, M. (2005). The mental and physical health outcomes of green exercise. *International Journal of Environmental Health Research, 15,* 319-337. doi: 10.1080/09603120500155963
17=	23	**Giles-Corti, B**., & Donovan, R.J. (2002). The relative influence of individual, social and physical environmental determinants of physical activity. *Social Science & Medicine, 54*(12), 1793-1812.
19	22	**Sallis, J.F**., Bauman, A., & Pratt, M. (1998). Environmental and policy interventions to promote physical activity. *American Journal of Preventive Medicine, 15,* 379–397.
20=	21	**Owen, N**., Humpel, N., Leslie, E., Bauman, A., & Sallis, J. (2004). Understanding Environmental Influences on Walking: Review and Research Agenda. *American Journal of Preventive Medicine, 27,* 67-76. doi:10.1016/j.amepre.2004.03.006
20=	21	**Nielson, T.S**., & Hansen, K.B. (2007). Do green areas affect health? Results from a Danish survey on the use of green areas and health indicators. *Health & Place, 13*(4), 839-850. doi:10.1016/j.healthplace.2007.02.001
22	20	**Kaplan, R**. (2001). The Nature of the View from Home: Psychological Benefits. *Environment and Behavior, 33,* 507-542. doi: 10.1177/00139160121973115
23=	19	**Hoehner, C.M**., Brennan Ramirez, L.K., Elliot M.B., Handy, S.L., & Brownson, R.C. (2005). Perceived and objective environmental measures and physical activity among urban adults. *American Journal of Preventive Medicine, 28,* 105-116. doi:10.1016/j.amepre.2004.10.023
23=	19	**Maas, J**., Verheij, R.A., Spreeuwenberg, P., & Groenewegen, P. (2008) Physical activity as a possible mechanism behind the relationship between green space and health: A multilevel analysis. *BMC Public Health, 8,* 206-219. doi:10.1186/1471-2458-8-206
23	19	**Armstrong, D**. (2000). A survey of community gardens in upstate New York: Implications for health promotion and community development. *Health & Place, 16*(4), 319-327.

Table 6.11 The themes of the top 25 most frequently cited publications between 1817 and 12th Nov 2012

Year	Psychological benefits	Physical activity	Health promotion/ community development	Green space, health and epidemiology
1984	Ulrich, R.S.[1](37)[2]			
1989	Kaplan, R.(47)			
1991	Ulrich, R.S.(36)			
1991	Hartig, T.(28)			
1995	Kaplan, S.(35)			
1998		Sallis, J.F.(22)		
2000			Armstrong, D.(19)	
2001	Kaplan, R.(20)			
2002		Giles-Corti, B.(23)		
2002		Takano, T.(47)		Takano, T.(47)
2002		Humpel, N.(35)		
2003	Grahn, P.(24)			
2003				De Vries, S.(47)
2003	Hartig, T.(41)			
2004		Owen, N.(21)		
2005		Hoehner, C.M.(19)		
2005		Giles-Corti, B(40)		
2005		Bedimo-Rung, A.L.(35)		
2005		Pretty, J.(23)		
2006				Maas, J.(49)
2007		Cohen, D.(28)		
2007				Mitchell, R.(26)
2007				Nielson, T.S.(21)
2008				Mitchell, R.(40)
2008		Maas, J.(19)		Maas, J.(19)

[1] Lead Author
[2] Frequency of Citation

6.4 Discussion

Taking a long term, developmental view, this bibliometric analysis has revealed that the idea of contact with nature to enhance health is not a new idea. In fact, its more recent emergence can be understood as having its origins in the early writings of several authors active during the early part of the 19th Century. In writing journal articles academics drew on relevant publications prior to the 1970s (the date the Web of Science database goes back to) with some dating back to the 1800s, the earliest being 1817. This is not to say that this is the earliest publication relating to the idea of contact with nature to enhance health because, as highlighted in Chapter 4, the idea dates back to the times of ancient Greece and possibly before, but 1817 is the earliest date of publication referred to by the authors of the 269 publications of the initial Web of Science search.

The 1817 publication is the *Glasgow Royal Asylum for Lunatics 3rd Annual Report*. Later annual reports for the same asylum (dated 1861, 1873, and 1908) also appear in the data set of 8,711 cited references. These publications refer to the importance of 'outdoor labour' for the wellbeing of patients with mental health problems particularly the benefits derived from being outside engaged in gardening or agriculture. For example in the 3rd Annual Report reference is made to physical activity as an aid to addressing disassociated thoughts: "it seemed as if vapours of the brain exhaled with the sweat of the brow" (Glasgow Royal Asylum for Lunatics, 1817, p.20).

The second earliest publication referred to is an article entitled 'The lungs of London' by J.F. Murray in *Blackwood's Edinburgh Magazine* of August 1839. In this 15 page article Murray describes the benefits of the park areas of London as "great vehicles of exercise, fresh air, health, and life to the myriads that congregate in the great metropolis" (p.226). Of St. James's park Murray quotes an unknown observer of life in the park: "At this place ladies walk four or five miles in a morning, with all the alacrity imaginable, who at home think it an insupportable fatigue to journey from one end of the chamber to another" (p.216).

These two early publications represent commonly held intuitive beliefs about the benefits of contact with nature to enhance health in contrast to the more scientifically systematic research post 1970s. It also shows the ways in which early ideas became the subject of research. The requirement for more 'robust evidence' to inform public health is a reflection of this development.

The first journal article of the 8,711 cited references appears in 1853 in the *Asylum Journal of Insanity.* The article is written by Dr J. Thurnam, Medical Superintendent of the Wiltshire County Asylum and is a survey of the land attached to the County Asylums of England. In this report Thurnam writes of the outdoor pursuits of farming and horticulture as being more salutary for patients than pursuits of a mechanical and sedentary type such as those pertaining to manufacturing. Thurnam also notes that a larger acreage of land would be "beneficial and gratifying" (p.7) to many of the patients in that it would afford more varied agricultural pursuits.

The second journal article by Fox and Lloyd 'Convalescence on the Coast' appears in the medical journal *The Lancet* in 1938. In this article, first presented to the International Conference on Thalassotherapy held at Montpellier, June, 1938, Fox and Lloyd remind readers of the history of the invigorating effects of sea air and sea bathing and the practice of "bringing ailing people to the coast and so mitigating the worst evils of industrialism in England" (p.37).

Amongst the other early publications referred to are the classic texts, that is to say ones that continue to receive recognition and are often cited, of Olmsted (1865), Warner (1870), Muir (1901), and Howard (1902) (see Table 6.3). The idea of contact with nature to enhance health appears in these texts in discussions about nature in cities (Olmsted 1865; and Howard, 1902), about the attractions of gardening (Warner, 1870) and the development of national parks (Muir, 1901). The benefit for mental health of working on the land is a recurring discourse in the references. Early concerns relate to mental health and wellbeing. Subsequently a focus on physical activity has also become significant as overweight and obesity has become more of public health issue.

By 1960 the importance of connectivity with the land had been incorporated into a monograph about the importance of the non-human environment to normal development and schizophrenia by the psychoanalyst Harold Searles (1960). In the preface of the book he states:

> For as far back as I can recall, I have felt that life's meaning resided not only in my relatedness with my mother and father and sister and other persons, but in relatedness with the land itself – the verdant or autumn-tapestried or stark and snow-covered hills, the uncounted lakes, the rivers. (p.ix)

Thus by looking at some of the early references (pre-1971) behind the data in Table 6.2 it can be seen that the idea of contact with nature to enhance health from 1817 onwards is appearing in books, magazines, annual reports and journals. The idea takes many forms in the literature with aspects of art, folklore, and poetry evident in the early references. So there were broad interdependent figurations from across the arts and sciences, all with varying interests in the idea of contact with nature to

enhance health. For example in writing *Our National Parks* in 1901 Muir penned the following poetic words:

> Climb the mountains and get their good tidings. Nature's peace will flow into you as sunshine flows into trees. The winds will blow their own freshness into you, and the storms their energy, while cares will drop off like autumn leaves. (p.56)

What is also apparent is that the ideas about contact with nature to enhance health prior to the 1970s appear to be untested empirically; nonetheless the ideas informed, for example, the development of therapies, and parks. Latterly the requirement for 'evidence' has become notably more stringent.

Although it is difficult to isolate accurately the first empirically based publication, the findings reveal that scientific studies about the idea of contact with nature to enhance health began to appear in the 1970s. In 1973 Rachel Kaplan undertook a study to investigate the psychological benefits of gardening and in 1979 Ulrich researched the effects of viewing nature on feelings of anxiety and compared these with the effects of urban views. At the time of her study Kaplan (1973) notes that there is "surprisingly little in the empirical literature to support the psychological importance of the experience of nature" (p.145) and similarly Ulrich (1979) comments "given the persistence and importance of the 'nature tranquility hypothesis', it is surprising that this notion has remained virtually untested by researchers" (p.17). Hence both researchers have drawn attention to the dearth of scientific evidence at the time they were writing in the 1970s.

From 1971 onwards the number of publications annually started to grow. When the numbers of publications per annum from Table 6.2 are plotted over time the graph follows a strongly skewed bell-shaped curve (Figure 6.1). When the cumulative totals from the same data set are plotted the graph follows what Rogers (2003) terms a classical S-shaped diffusion curve (see Figure 6.2). Rogers (2003) has consistently demonstrated that the diffusion of new ideas over time by people in a social system will consistently follow the course of an S-shaped curve which illustrates the emergence, growth, maturity and decline of an idea. When the cumulative number of publications, about the idea of contact with nature to enhance health, is plotted the increase rises slowly at first with only a few publications in each decade and then

accelerates to a maximum. Between 2004 and 2007 there is a plateauing and then the number of publications starts to decrease. Gladwell (2000), based on the work of sociologists in the 1970s (for example Granovetter, 1978), describes a 'tipping point' in which a phenomenon becomes rapidly more common. Gladwell (2000) describes this point as "the moment of critical mass, the threshold, the boiling point" (p.12) or more practically "the name given to that one dramatic moment in an epidemic when everything can change all at once" (p.9). The tipping point is the point on a graph where the line suddenly turns upwards. In Figure 6.2 it can been seen that there is no tipping point. The acceleration in the number of publications annually rises steadily. Although there is no obvious tipping point the 1980s appear to be the decade within which the rate of increase in the research literature starts to gather momentum. Whilst the S-shaped diffusion curve is useful in noting the overall increase in interest in the idea and then the number of publications falling off, it does not explain why this happened, that is to say, the S-shaped curve does not reveal the complexity of the process behind the phenomenon.

Ulrich's work in the 1980s and early 1990s appears to have been particularly influential; Ulrich has been a key actor in the research figuration and his work has extended to policy and user figurations. From Table 6.8 it can be seen that Ulrich is the most frequently cited lead author. One article by Ulrich (1984) could be described as seminal and therefore a particularly powerful source of the idea. The article *View Through a Window May Influence Recovery From Surgery* not only dates back to 1984 but has been frequently cited (it appears as the 8th most cited reference overall in Table 6.10). It is an example of early empirical evidence that is frequently referred to in systematic literature reviews about the health benefits of contact with nature (for example, Maller et al., 2008; Annerstedt & Wahrborg, 2011). The subject matter of the article is clinical health care, notably surgery, and this could be a factor in the enduring interest in the paper, that is to say, medical figurations are powerful and people from other figurations may use medical related examples of evidence to strengthen their arguments. At the time of Ulrich's early articles evidence based medicine was being given increasing emphasis within the development of medicine and health care more generally. This created demand for scientific studies to inform medical and health care decisions, in order to increase both effectiveness and cost efficiency (Grol & Wensing, 2004). Although Ulrich's

(1984) research has been challenged subsequently on the grounds of reliability due to poor data collection techniques (Health Council of Netherlands, 2004), it has continued to have influence in that it has been cited as 'evidence' by numerous actors in research figurations.

To take the idea of how viewing natural settings might influence health further Ulrich, in 1991, hypothesised that the viewing of unthreatening natural environments via videotapes would have a stress reducing or restorative influence on stressed individuals, whereas viewing urban environments would hamper recuperation. Ulrich's article of 1991 is the 9th most cited reference (see Table 6.10) and is a particularly significant node in the figuration. Both of Ulrich's articles have directly influenced the work of Barton and Pretty (2010) who have drawn on the articles, when theorising, in order to devise a classification system of the levels of engagement with nature (see Section 4.7). Researchers become familiar with the work of others through reading, attending conferences and through networking with other researchers although this, as the use of Ulrich's work by Barton and Pretty shows, is not necessarily contemporaneous. This is an example of the lengthening chains of interdependency across several decades and also across nations (Sweden and the UK respectively).

Kaplan and Kaplan's book of 1989 has also been influential over successive decades. It is the only book to be listed in the top 25 most frequently cited publications (see Table 6.10). In the book Rachel and Stephen Kaplan explore the restorative influences of nature, perceptions of nature and preferred environments and take a theoretical stance which concentrates on the recovery of the capacity to focus attention. Ulrich's work, as Hartig and Evans (1993) argue, takes a different view as it is more concerned with emphasising contact with nature to aid stress reduction. These two examples give an indication of the emerging ways in which different researchers were receptive to the idea of contact with nature to enhance health and were using it to further their more specific research interests.

Following the attention on the individual and how the individual perceives, physiologically reacts to, and appreciates nature there was increasing interest, in the 1990s and early 2000s, in the environmental determinants of health with a specific

focus on how the environment affords opportunities for increased physical activity. From Table 6.10 it can be seen that of the top 25 most frequently cited publications, 11 are about physical activity with walking being of particular interest in four articles. The importance of walkable green spaces, accessibility to them and their aesthetic quality were developing themes at this time. In Owen et al.'s (2004) work, which occupies equal 20th position in Table 6.10, the research agenda for environmental influences on walking is described as 'promising' particularly the aim of determining whether environment-behaviour relationships are causal. From 2002 onwards attention is given to large scale epidemiological studies that examine the causal relationships between green space and health. These studies typically use self-reported health or mortality data and access to green space at a neighbourhood level. The most frequently cited article by Maas et al. (2006) is of this type. This diffusion of the idea of contact with nature to enhance health relating to physical activity (as well as the prevention or treatment of disease), among epidemiological researchers during this period, reflected the emerging emphasis on evidence informed public health and the articulated requirement for evidence to be a basis for public health investments. Alongside this development, policy makers were expressing concerns related to the rising tide of chronic degenerative conditions as well as, more specifically, the increasing prevalence of overweight and obesity in many developed countries. Research evidence in this field was thus of interest to an expanding figuration of actors.

The focus on individual level recovery and treatment (rather than population-level prevention) in the early empirical research of the 1970s, reflects the medical paradigm, which was the dominant approach to health during this period, as outlined in Chapter 4. The expansion in researchers' focus to environment-behaviour relationships in the 1990s and early 2000s coincides with an emphasis at the time, within the emerging new public health era, on 'lifestyle' choice and an awareness of rising obesity levels. Alongside these developments was a renewed interest in "environmental change and personal preventative measures with appropriate therapeutic interventions …" (Ashton & Seymour, 1988, p.21). The interweaving of these processes contributed to the expansion of the research figurations in that larger scale epidemiological studies from 2002 onwards began to emerge. They can be understood as a move to exploring the relationships between 'ecology and disease'

using tools such as Geographic Information Systems. Researchers from a wide variety of academic disciplines – including geography, town planning and environmental sciences – from across many departments from institutions from across the globe expanded the figurations.

An understanding of the form that the idea of contact with nature to enhance health takes within the research is helpful in thinking about how the idea is seen at various times by different researchers. It can be seen that the researchers, through interweaving processes, are generators and investigators of new and different forms of the idea. Arguably other figurations are of journal editors, and peer reviewers, who are the gate keepers of what does and does not get published. These are networks of people who are receptive to the idea and use it to further their own interests and have the power to do so.

An Eliasian perspective can be used to understand the pattern of diffusion of the idea of contact with nature to enhance health within the research figuration of interdependent and mutually oriented people (Elias, 2000) who have been researching and writing about the idea. These figurations are located within a cultural context in which the idea of contact with nature to enhance health has been valued by successive generations in many different ways, first intuitively and then as the focus of empirical research. Within the empirical research there are citations that date back to 1817 thus showing the lengthening chains of interdependency (Elias, 2000). The empirical research has not taken a linear path whereby one form of the idea is systematically examined after another but there are divergent paths and different methods applied in the research. These divergent paths may have resulted from tensions amongst, or in turn may trigger tensions in, groups of researchers. For example, bidding for research funding to research councils in the UK and other quasi-governmental agencies is competitive (and there are gatekeepers to negotiate). There is also pressure on researchers to publish and perhaps the attraction of following the money associated with hot topics (Shu, 2009).

From Tables 6.4, 6.5 and 6.6 it can be seen that the research on contact with nature to enhance health appears in journals that cover a range of academic fields such as environment, geography, public health, medicine, and psychology. Further

classification into sub-categories (such as ecology, urban studies, behavioural medicine and health psychology) revealed that many of the journals are explicitly transdisciplinary in nature, which has been an emerging feature of academia in general since the 1980s, as well as within the health promotion and public health fields more specifically. Information from the author guide on the website of the journal Landscape and Urban Planning (2014b) (the top publication source from the bibliometric analysis, see Table 6.5) illustrates this point:

> Multiple disciplines and perspectives are required to understand landscapes and align social and ecological values to ensure the sustainability of landscapes. The journal is based on the premise that landscape science linked to planning and design can provide mutually supportive outcomes for people and nature. (Landscape and Urban Planning, 2014b, no page number)

The biographical data of the 25 most frequently cited lead authors (Table 6.8), and the aims of the work units in which they are employed shows that the authors are from a range of academic fields and that these are closely aligned to the academic fields and sub-categories that the journals represent. The publication of research in journals – particularly those that are transdisciplinary in orientation – is a process that contributes to the diffusion of the idea of contact with nature to enhance health especially within research figurations. The process also gives rise to diffusion beyond this figuration to those with an interest in research evidence, such as those working within the policy and strategy fields.

Figure 6.3 shows where the 25 most cited lead authors are located which is predominantly in the United States of America (10) and northern Europe (10). Other represented locations are Australia (3), Canada (1) and Japan (1). Diffusion has not been limited to these areas. For example, in reviewing the Chinese literature about therapeutic landscapes and healing gardens, Jiang (2014) made a comparison with theories from the literature of western countries about how and why nature can heal. Jiang (2014) found that the far fewer empirical studies in the Chinese literature were influenced heavily, in terms of study design, by western research.

An analysis of the top 25 most frequently cited publications revealed the varied ways in which research into the idea has been framed, that is, from psychological and

wellbeing benefits, to behavioural approaches linked to physical activity, to spatial and environmental determinants by researchers using predominantly quantitative and mixed methods, with many examples of qualitative research within the total number of journal titles (1,576). Within the top 25 most frequently cited publications there are examples of experiments, surveys, interviews, reviews of other literature, an article based on health promotion practice, and one article in which an integrative theoretical framework is outlined. This illustrates how diffusion has been mediated by many actors in diverse research communities being receptive to the idea in terms of furthering their own specific research interests using various research methodologies.

Further, the generation of the empirical research, in the bibliometric study, spans a 40 year period from the early 1970s towards the end of 2012. During this time period multiple figurations of researchers have been receptive to the idea. The bibliometric analysis has revealed that the diffusion of the idea of contact with nature to enhance health within research figurations has been globalised. Furthermore, researchers, all pursuing their own interests and goals, have produced a diverse body of evidence relating to the idea of contact with nature, an outcome which has not been planned or intended by any individual or group. Nonetheless, the interweaving of research related processes, particularly those relating to publication of research, has given rise to a diversity of research foci and methodologies of potential interest to an increasing diversity of actors within and beyond the research figurations.

Not only has research relating to the idea of contact with nature to enhance health been globalised, the associated outcomes of research activity, such as publications, have also increased in numbers exponentially during the last four decades in particular (that is to say, since the 1970s). This pattern can be explained by researchers seizing the increasing opportunities available to further their own interests through their interdependent power relations with others in the research figurations. These opportunities emerged from the interweaving processes relating to broader social developments during this period: the expansion of the university sector in England in particular, the increasing emphasis on research and research performance globally, alongside processes relating to the reorientation of public health and health promotion towards prevention and a focus on the wider

determinants of health (of which nature is an example). In his work on scientific establishments Elias (2009b) comments upon the fierce rivalries between academics both as individuals and as groups "The whole figuration is animated by a competitive struggle for preservation, avoidance of loss or rise of status and power chances" (p. 137) and notes that this competition extends to securing economic resources.

Research figurations are both structured and dynamic. Researchers will be interdependent with others through working in the same place of work, will meet fellow researchers at conferences, and there will be collaboration on writing bids and articles. Such groupings could be seen as 'communities of practice': a term coined by Lave and Wenger (1991) to describe a close-knit group of professionals who interact regularly, share information and learn from each other. Such communities are often unidisciplinary (Dopson & Fitzgerald, 2005). On other occasions groupings will be more along the lines identified by Brown and Duguid (2000) as 'networks of practice' whereby:

> … people in such networks have practice and knowledge in common. Nevertheless, most of the members are unknown to one other. Indeed, the links between the members of such networks are usually more indirect than direct … members coordinate and communicate through third parties, or indirectly. Coordination and communication are, as a result, quite explicit. (p.142)

These groupings are examples of the processes by which researchers engage with each other in academic life.

For Elias (2009b) the transmission of scientific knowledge is intergenerational; no-one starts with a *tabula rasa*, rather "every individual problem-solver is seen to stand on the shoulders of others…" (p.119). Elias describes this as people taking the torch from an earlier generation, carrying it for a while and then passing it on to the next generation. Everyone is in receipt of accumulated knowledge; this is their inheritance. The bibliometric method illustrates this point. In this study the development of *scientific* knowledge about the idea of contact with nature to enhance health dates back mainly to the 1970s. Prior to this accumulated knowledge about the idea diffused through many diverse figurations within which people passed on

their intuitive understanding through the process of social learning and cultural development (this is explored further in Chapter 9 in relation to habitus).

Elias (2009b) writes relatively extensively in the 1970s about scientific establishments, notably the long term and unplanned trend towards specialisation and the social mechanisms that operate against interdisciplinary work. However, in this study there appears to be something of a counter trend in that the research related to the idea of contact with nature to enhance health has been undertaken by researchers from a breadth of disciplines, working in a range of academic departments that comprise multi-disciplinary teams and have multi-disciplinary agendas. The emergence of transdisciplinary research among researchers with interests in the field of contact with nature is an example of an unplanned outcome from the interweaving of many processes.

Elias (2009c) describes investigations without a theoretical framework as being " … like sea voyages without a map or compass. One sometimes chances on a harbour but the risk of shipwreck is high" (p.130). Elias (2009c) was equally disparaging about theoretical investigations without an empirical base. One conclusion from his comments is that there is scope for further theorising about the idea of contact with nature to enhance health based on empirical work (this is undertaken in Chapter 9 with regard to the diffusion of the idea of contact with nature to enhance health).

Elias's concept of figurations is useful as it directs attention towards a less bounded, mechanistic and systems based way of looking at the diffusion of an idea such as contact with nature to enhance health. Thus the diffusion of the idea in the research literature is not bounded such that it is independent of those reading the research (scholars particularly), or the media reporting the research, or quasi-governmental agencies funding the research, or governments using the research in local and national policy, or indeed organisations and practitioners engaging with the research. Shared histories and any intuitive understanding about the idea of contact with nature enhancing health (or conversely being harmful) co-exist alongside formal scientific empirical evidence. Thus the empirical evidence identified and discussed in this chapter adds to, but does not displace, broader knowledge (folklore) about the idea. The diffusion of the idea has been revealed to be complex spatially and temporally.

In summary, Eliasian theory offers a more adequate explanation of the diffusion of the idea of contact with nature to enhance. The idea has diffused through multiple figurations of researchers from different disciplines and with diverse interests. The research has been influenced by the historical, social and political context. Trends, relating to the ways in which the idea has been investigated by figurations of researchers, are discernible across successive decades. Further, the diffusion of the idea has been influenced by many other figurations of people associated with the research and publication process.

Chapter 7: Sub-study 2 - The emergence and framing of the idea of contact with nature to enhance health in the contemporary policy literature of England

7.1 Introduction

The aim of Sub-study 2 was to analyse critically the content of extant national policy documents for evidence of the idea of contact with nature to enhance health. In order to achieve this aim, the study sought to answer the following questions:

- When does the idea emerge in contemporary policy and to what extent does the idea appear?
- How have policy makers framed the idea in contemporary policy?
- How does this vary across the different government departments?

Sub-study 2 was undertaken through content analysis (see Chapter 5, Section 5.7 for a discussion about content analysis). The starting point for this sub-study was that figurations of researchers and figurations of policy makers are interdependent in myriad ways but there was no assumption of linearity between research and policy.

7.2 Method

During August to December 2012 a search was undertaken of individual government department websites for the following:

- Department of Health (DH);
- Department for Environment, Food and Rural Affairs (DEFRA);
- Department for Culture, Media and Sport (DCMS);
- Department for Communities and Local Government (DCLG);
- Department for Education (DE).

The aim was to locate government department policy documents that had evidence of the idea of contact with nature to enhance health. A brief summary of each department is given in the first part of Appendices D, E, F, G, and H respectively. The departments were chosen based on preliminary investigations, that is to say, the purpose of all UK government departments was perused and consequently five

departments were identified as having possible relevance to the idea of contact with nature to enhance health. The DCMS was chosen because Sub-study 1 revealed that the idea of contact with nature to enhance health appeared in tourism related journals: tourism is within the remit of the DCMS.

The search strategies for each department differed because the individual departments had different websites (since amalgamated into one site). The search of each department website went back as far as the website would allow. For example, for the Department of Health the search went back to 1996 whereas for the Department for Environment, Food and Rural Affairs it was only possible to search as far back as 2002. Detailed search strategies of each website are given in Appendices D, E, F, G, and H respectively.

The initial searches of the websites for evidence of the idea of contact with nature to enhance health covered the dates 1996-2012 and identified 1,451 policy documents across the five government departments. To answer the question *When does the idea emerge in contemporary policy and to what extent does the idea appear?* all 1,451 documents were screened by title, and if judged to be of relevance to the idea of contact with nature to enhance health, the publication descriptor was perused. If this indicated possible content about the idea of contact with nature to enhance health, the full document was screened by using the 'find' facility using selected words from: green, green space, nature, natural, environment, benefit, health, wellbeing, and outdoor play. It was necessary to vary the words used according to the website being searched because different terminology was used by each department. For example the words 'natural' and 'environment' (making the phrase 'natural environment' when used together) were used by the Department for Environment, Food and Rural Affairs whereas the words 'green' and 'space' (making the phrase 'green space' when used together) were terms used by the Department for Communities and Local Government.

7.3 Results

The idea of contact with nature to enhance health appeared in a total of 47 documents from across the five government departments. The 47 documents are shown, by department, in Tables 7.1, 7.2, 7.3, 7.4, and 7.5 respectively; the documents are

arranged chronologically. Each document has been given a reference that will be used in this thesis when reporting on the content analysis of these documents.

Table 7.1 The documents containing evidence of the idea of contact with nature to enhance health from the Department of Health website

Department of Health (DH) website			
Reference within thesis	**Title**	**Identifier as per document**	**Date**
DH1	White Paper: Choosing health: Making healthier choices easier	Cm 6374	Nov 2004
DH2	White Paper: Our health, our care, our say: A new direction for community services	Cm 6737	Jan 2006
DH3	Delivering sustainable development: DH action plan 2007/2008	Gateway reference 8751	Oct 2007
DH4	Healthy weight, healthy lives. A cross government strategy for England	Gateway reference 9204	Jan 2008
DH5	On the state of public health: Annual report of the Chief Medical Officer 2007	Product no:287834	July 2008
DH6	Taking the long term view: the Department of Health's strategy for delivering sustainable development 2008-2011	Gateway ref 10591	Oct 2008
DH7	Healthy lives, healthy people: Our strategy for public health in England	Cm 7985	Nov 2010
DH8	Healthy lives, healthy people. A call to action on obesity.	Gateway reference 16166	Oct 2011
DH9	Public health in local government	Gateway ref 16747	Dec 2011
DH10	Healthy lives, healthy people: Improving outcomes and supporting transparency • Part 1: A public health outcomes framework for England, 2013-2016 • Part 2: Summary technical specifications of public health indicators	Gateway reference 16891	Jan 2012

Table 7.2 The documents containing evidence of the idea of contact with nature to enhance health from the Department for Environment, Food and Rural Affairs website

Department for Environment, Food and Rural Affairs (DEFRA) website			
Reference within thesis	**Title**	**Identifier as per document**	**Date**
DEFRA1	Working with the grain of nature - a biodiversity strategy for England	PB7718	Oct 2002
DEFRA2	Securing the future - delivering UK sustainable development strategy	PB10589	Mar 2005
DEFRA3	Strategy for the horse industry in England and Wales	PB11323	Dec 2005
DEFRA4	Guidance for local authorities on implementing the biodiversity duty	PB12584	May 2007
DEFRA5	Conserving biodiversity - the UK Approach	PB12772	Oct 2007
DEFRA6	An introductory guide to valuing ecosystem services	PB12852	Dec 2007
DEFRA7	Sustainable development indicators in your pocket 2009	PB13265	July 2009
DEFRA8	DEFRA's climate change plan	PB13358	Mar 2010
DEFRA9	Natural environment - adapting to climate change	PB13323	Mar 2010
DEFRA10	An invitation to shape the nature of England	PB13428	July 2010
DEFRA11	DEFRA's sustainable procurement policy statement	PB13474	Mar 2011
DEFRA12	National Park Authorities - assessment of benefits - working paper	PB13533	May 2011
DEFRA13	Government response to the making space for nature review	PB13537	June 2011
DEFRA14	White Paper. The natural choice: Securing the value of nature	CM8082	June 2011
DEFRA15	Biodiversity 2020: A strategy for England's wildlife and ecosystem services	PB13583	Aug 2011
DEFRA16	Total environment progress report	PB13731	Mar 2012

Table 7.3 The documents containing evidence of the idea of contact with nature to enhance health from the Department for Culture, Media and Sport website

Department for Culture, Media and Sport (DCMS) website			
Reference within thesis	**Title**	**Identifier as per document**	**Date**
DCMS1	The historic environment: A force for our future (part 1)	PP378	Dec 2001
DCMS2	Government tourism policy	No identifier	Mar 2011

Table 7.4 The documents containing evidence of the idea of contact with nature to enhance health from the Department for Communities and Local Government website

Department for Communities and Local Government (DCLG) website			
Reference within thesis	**Title**	**Identifier as per document**	**Date**
DCLG1	White Paper. Our towns and cities: The future - delivering an urban renaissance.	Cm 4911	Nov 2000
DCLG2	Beacon Council research report - improving green urban spaces	No identifier	July 2001
DCLG3	Literature review of public space and local environments for the cross cutting review	No identifier	Nov 2001
DCLG4	Green spaces, better places: Final report of the urban green spaces taskforce (full report and summary)	02UP00206	May 2002
DCLG5	Improving urban parks, play areas and open spaces	02HC000107	May 2002
DCLG6	Green and public space research: Mapping and priorities	06ASDO3935	June 2006
DCLG7	Living places: Cleaner, safer, greener	02 UP 00687	Sept 2006
DCLG8	Planning for a sustainable future: White Paper	Cm7120	May 2007
DCLG9	How to create quality parks and open spaces	07CRLD04581	June 2007
DCLG10	Trees in towns II: Executive summary	978 185 112 8891	Feb 2008
DCLG11	Eco-towns: Sustainability appraisal - scoping report for the planning policy statement on eco-towns. Appendices	08SCG05466/A	July 2008
DCLG12	World class places: The government's strategy for improving quality of place	ISBN 978-0-7115-0482-0	May 2009
DCLG13	Space for food growing: Guide	ISBN 978-1-4098-3496-0	Aug 2012
DCLG14	Food growing. Case studies	ISBN 978-1-4098-3499-1	Aug 2012

Table 7.5 The documents containing evidence of the idea of contact with nature to enhance health from the Department for Education website

Department for Education (DE) website			
Reference within thesis	**Title**	**Identifier as per document**	**Date**
DE1	Growing schools	TGSG 0515	Oct 2003
DE2	Design for play: A guide to creating successful play spaces	DCSF-00631-2008	Sept 2008
DE3	Promoting the emotional health of children and young people: Guidance for Children's Trust partnerships, including how to deliver NI50	DCSF-01125-2009	Jan 2010
DE4	Top tips for schools to engage with biodiversity	DCSF-00227-2010	Mar 2010
DE5	Improving young people's lives: the role of the environment in building resilience, responsibility and employment chances	SADC-IYPL	Oct 2010

Table 7.6 shows, for each of the five government departments, the date the search was undertaken, the date range of the search, the date range of policy documents containing evidence of the idea of contact with nature to enhance health, and the total number of documents retrieved for each department.

Table 7.6 Summary data for the searches of the government departments

Government department	Date search undertaken on	Date range of search	Date range of publications with relevant findings	Total number (%)
Department for Environment, Food and Rural Affairs	9, 10, 24 Aug 2012 & 9 Sept 2012	2002-2012	2002-2012	16 (34%)
Department for Communities and Local Government	29 Sept 2012	1997-2012	2000-2012	14 (30%)
Department of Health	8 Aug 2012 & 9 Sept 2012	1996-2012	2004-2012	10 (21%)
Department for Education	6 Oct 2012	1999-2012	2003-2010	5 (11%)
Department for Culture, Media and Sport	23 Sept 2012 & 19 Dec 2012	1998-2012	2001-2011	2 (4%)
				47 (100%)

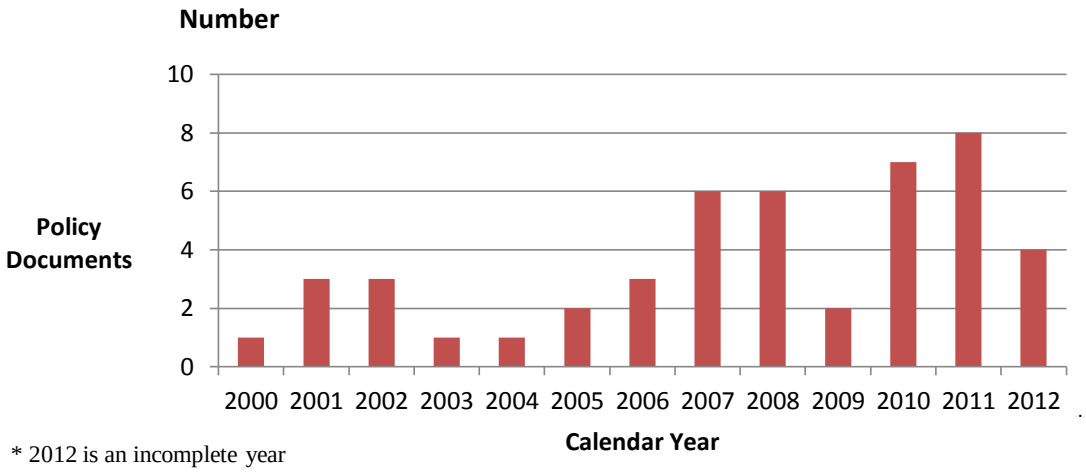
The department website with the greatest number of policy documents was the Department for Environment, Food and Rural Affairs. Between 2002 and 2012 (a span of ten years) the department published 16 documents (34% of all documents retrieved) containing evidence of the idea of contact with nature to enhance health. This compares with the Department of Health, the government department with an explicit mission to address health issues including public health, of 10 (21%) documents over a span of eight years. From Table 7.6 it can be seen that the earliest policy document, available on any of the five websites, containing evidence of the idea of contact with nature to enhance health was published in 2000 and was retrieved from the website of the Department for Communities and Local Government. The document is the White Paper *Our Towns and Cities: The Future - Delivering an Urban Renaissance* (DCLG1, 2000) in which reference is made to the importance of green spaces, parks, children's play areas, allotments, and woodlands in enhancing the quality of lives and reducing stress. Therefore, this is a significant document from a policy perspective.

A direct comparison of the emergence of the idea in policy documents across the different government departments is problematic because the start date of each search varied (as mentioned previously the website for the Department of Health had entries from 1996 onwards whereas the website for the Department for Environment, Food and Rural Affairs only dated back as far as 2002). The number of policy documents per year in which the idea of contact with nature to enhance health appeared across all the departments (see Table 7.7) shows a peak in 2011 of 8 documents. When viewed as a graph this information for the years 2000 to 2012 (see Figure 7.1) reveals a general upward trend of increasing appearance of the idea in all policy documents taken together until 2012, with peaks in 2001-2002, 2007-2008, and 2010-2011. There appears to be a sharp tailing off in the number of policy documents in 2012; one explanation could be because 2012 was an incomplete year in terms of data collection.

Table 7.7 Number of policy documents per year, by department, which contained references to the idea of contact with nature to enhance health

DH		DEFRA		DCMS		DCLG		DE		Total for all departments
1996		1996		1996		1996		1996		-
1997		1997		1997		1997		1997		-
1998		1998		1998		1998		1998		-
1999		1999		1999		1999		1999		-
2000		2000		2000		2000	1	2000		1
2001		2001		2001	1	2001	2	2001		3
2002		2002	1	2002		2002	2	2002		3
2003		2003		2003		2003		2003	1	1
2004	1	2004		2004		2004		2004		1
2005		2005	2	2005		2005		2005		2
2006	1	2006		2006		2006	2	2006		3
2007	1	2007	3	2007		2007	2	2007		6
2008	3	2008		2008		2008	2	2008	1	6
2009		2009	1	2009		2009	1	2009		2
2010	1	2010	3	2010		2010		2010	3	7
2011	2	2011	5	2011	1	2011		2011		8
2012*	1	2012*	1	2012*		2012*	2	2012*		4
Total	10		16		2		14		5	**47**

* 2012 is an incomplete year



* 2012 is an incomplete year

Figure 7.1 Graph to show the number of policy documents per year, 2000-2012, that had content relating to the idea of contact with nature to enhance health

To answer the question *How have policy makers framed the idea in contemporary policy?* and *How does this vary across the different government departments?* the 47 documents were scrutinised further by screening for phrases containing the words 'Green' or 'Natur' (to cover the words nature and natural) or 'Environment' or 'Benefit'. Across the 47 documents there were 17,020 such phrases of which 1,055

were relevant to the idea of contact with nature to enhance health. Hence many uses of the words were not relevant to the idea such as when 'Green' is used in the phrase 'Green Paper' or when 'Nature' is used to mean the inherent character of something.

The 1,055 relevant phrases, and the sentences in which they were embedded, were then analysed to ascertain the form that the idea took in the policy context, that is to say, the way the idea was framed and presented in the document in relation to ideas and values. The analysis was done by department and emerging similarities and differences between the departments were organised into themes. Each theme represented a category of meaning and understanding that was used to convey the way the idea had been framed. Six themes were identified, two of which captured the similarities between the departments and four themes captured the differences. Table 7.8 shows the six themes identified following the analysis of the 47 documents. The themes where there was similarity across the government departments were 'Research Evidence' and 'Across Sector Action', each of these appeared in four out of the five departments. The differences between the departments were highlighted by the themes 'Instrumentality', 'Ecosystem Services', 'Community Green Space', and 'Curricula'. These theme titles were chosen to reflect the characteristic and distinctive way that each department, with the exception of the Department for Culture, Media and Sport, tended to frame the idea of contact with nature in its policy documents.

The Department for Culture, Media and Sport is an exception because there was very minimal diffusion of the idea of contact with nature to enhance health within the policy documents of this department. The department produced only two policy documents between 1998 and 2012 with any phraseology relevant to the idea of contact with nature to enhance health. Following analysis the phrases were classified under the theme 'Across Sector Action'. One extract, appearing in 2011 in the document *Government Tourism Policy* (DCMS2, 2011) refers to the White Paper on the natural environment (DEFRA14, 2011): "The Government's vision for how tourism and the tourism industry can work with, maintain and enhance the environment will be set out in the Natural Environment White Paper" (p.25). This exemplifies the stance of the key policy makers working in the department, that is to say, there was scant information on the idea from the department itself but other

departments, and their involvement with the idea, were referred to. Policy makers working in the department during the period did not see the idea as a core aspect of the department's work.

Table 7.8 Content analysis themes across the government departments

	Themes					
	Themes with similarity across the departments		Themes with differences across the departments			
Government department	**Research evidence**	**Across sector action**	**Instrumentality**	**Ecosystem services**	**Community green space**	**Curricula**
Department of Health	✓	✓	✓			
Department for Environment, Food and Rural Affairs	✓	✓		✓		
Department for Culture, Media and Sport		✓				
Department for Communities and Local Government	✓	✓			✓	
Department for Education	✓					✓

7.3.1 Research Evidence theme

References to the research evidence about the idea of contact with nature to enhance health, whether directly cited or indirectly alluded to by the use of such terms as 'research suggests', were categorised under the theme Research Evidence. Within the policy documents key messages from the research literature tended to be paraphrased and provided without a full citation. This is indicative of the way in which policy makers tended to make use of research evidence.

The Research Evidence theme appeared in the policy documents of all of the departments with the exception of the Department for Culture, Media and Sport (see Table 7.8). Box 7.1 shows extracts from some of the 47 policy documents, by department, of references to the research evidence. Some of the research is recognisable despite the lack of a full citation. For example, the work of Ulrich (1984) *View Through a Window May Influence Recovery From Surgery* can be seen

under the Department of Health heading, second bullet point (DH6, 2008, p.19) and under the Department for Environment, Food and Rural Affairs heading, second example (DEFRA1, 2002, p.72). Similarly the work of Faber-Taylor, Kuo and Sullivan (2001) relating to the improved symptoms in children with attention deficit disorder who play in natural areas can be seen under the Department of Health heading, last bullet point (DH6, 2008, p.19) and under the Department for Education heading, first bullet point (DE3, 2010, p.78). One of these articles appears in Sub-study 1 of this thesis: it is Ulrich's article which is the 8th most cited by other researchers.

Box 7.1 Examples on the theme of Research Evidence

Department of Health

… [a] recent report Health, Place and Nature draws together in one place an evidence base showing how the environment can have a positive influence on health and well-being. (DH6, 2008, p.17)

- Accessibility to nearby attractive public green space and footpaths is more likely to increase levels of walking
- Patients recovering from operations are likely to stay in hospital for less time and need less pain killers if they look out onto a natural scene from their hospital bed
- Green exercise creates an immediate improvement in self-esteem
- Children with attention deficit disorder have significant improvements of symptoms if they play in natural areas or even have views of trees and grass outside their home. (DH6, 2008, p.19)

Department for Environment, Food and Rural Affairs

Even the simplest experiences of feeding ducks in the park, watching tadpoles in the garden pond, and hearing the robin singing on the way to work bring about the contact with nature that research suggests is an important contribution to our mental well-being. (DEFRA1, 2002, p.54)

Research is also showing that biodiversity influences our quality of life in more subtle ways. Mere visual contact with "nature" reduces our stress levels and promotes well-being … Motorists are less stressed when driving, under similar traffic conditions, along leafy tree and shrub-lined roads. Hospital recovery rates following surgery appear to be more rapid in patients with a view of green space than concrete. (DEFRA1, 2002, p.72)

There is a wide range of evidence showing that contact with nature enhances children's education, personal and social skills, health and wellbeing, leading to the development of responsible citizens. However, research also shows that the connections between young people and nature are weaker now than in the past. Children are becoming disconnected from the natural environment. They are spending less and less time outdoors. (DEFRA14, 2011, p.12)

Department for Communities and Local Government
There is … a wealth of literature about the health benefits of contact with nature, of proximity to or views of greenery and of the presence of trees and woodlands. Much of this research supports the view that the presence and use of green space can have marked benefits for the health of urban dwellers. (DCLG5, 2002, p.82)

Time spent in contact with nature has been shown to help mental well-being, with people reporting feeling much happier after a walk in a park than they do after a shopping trip. (DCLG12, 2009, p.15)

Department for Education

Although the evidence is limited and from relatively small-scale studies, there are indications that:

- access to green play spaces is linked with reduced severity of ADHD symptoms
- even small amounts of green space can facilitate relaxation/recovery from stress
- environmental factors such as being dissatisfied with access to green spaces and community facilities, and feeling unsafe to go out have been associated with a significantly higher risk of poor mental health in adults. (DE3, 2010, p.78)

7.3.2 Across Sector Action theme

The theme 'Across Sector Action' appeared in all of the departments with the exception of the Department for Education. Phrases that were relevant to the idea of contact with nature to enhance health with regard to partnership working, working together, strategic planning, and policy development across more than one agency or government department, were allocated to this theme and examples are given in Box 7.2.

From the examples it can be seen that there was encouragement in the documents for people to work together on agendas relevant to the idea of contact with nature to enhance health. For example, in one of DEFRA's strategy documents (DEFRA1, 2002, p.12) the stated aim of achieving acceptance of the idea and embedding nature conservation, linked to the quality of life, in all decision making and policy development was evident.

Further examples, again specifically from DEFRA (third, fourth and fifth example, Box 7.2), reflect the aspiration for government departments to commit to joint working through formal agreements. For example, in 2005 a Strategic Partnership Agreement between the Department of Health and the Department for Environment, Food and Rural Affairs was an intent, which was widened to an across government Public Service Agreement in 2007 and by 2011 Local Nature Partnerships (LNPs) were being proposed. Local Nature Partnerships (LNPs) are partnerships with a wide range of representatives from many local public and private organisations such as local authorities, The Wildlife Trusts, and United Utilities. The LNPs work towards improving the local natural environment, promoting nature *and* wellbeing, and making links between the natural environment and the economy.

The last two examples in Box 7.2 illustrate the diffusion of the idea into health organisations such as Primary Care Trusts (replaced by Clinical Commissioning Groups on 1 April 2013). In 2002 their involvement is described as an *unusual source* of support for partnership working (DCLG4, 2002, p.41). By 2007 'many parks services have teamed up with local Primary Care Trusts … to fund and operate specific health-related activities' (DCLG9, 2007, p.62). Thus the position of the health organisations had shifted over this five year period from one of support via funding to more active engagement through the direct provision of contact with nature related activities.

Box 7.2 Examples on the theme of Across Sector Action

Department of Health

We have a natural inclination in the Department to focus on the social and economic elements of the sustainable development agenda so we need to do more to make the environment and health a mainstream concern ... We will ensure that our policy development takes account of present and future environmental trends, alongside health and health inequalities impacts, as well as social, technological and economic trends. (DH6, 2008, p.17)

Department for Environment, Food and Rural Affairs

The aim of the Strategy is to ensure:

- the general acceptance of biodiversity's essential role in enhancing the quality of life, with its conservation becoming a natural consideration in all relevant public, private and non-governmental decisions and policies. (DEFRA1, 2002, p.12)

DEFRA and the Department of Health will enter into a Strategic Partnership Agreement in 2005 to help realise the shared benefit of an enhanced environment to

improving health. (DEFRA2, 2005, p.113)

… the benefits the natural environment provides are not yet valued properly in policy and project appraisal across government. The new cross-government natural environment Public Service Agreement (PSA), Secure a Healthy Natural Environment for Today and the Future, explicitly calls for the value of the services provided by the natural environment to be reflected in decision-making. (DEFRA6, 2007, p.2)

We will encourage and support Local Nature Partnerships where local areas wish to establish them. These partnerships will work at a strategic scale to improve the range of benefits and services we get from a healthy natural environment. (DEFRA14, 2011, p.68)

Department for Culture, Media and Sport

… the importance of the historic environment sector developing close partnerships with other interests: for example, the natural environment sector, the tourism industry and those involved in contemporary architecture. (DCMS1, 2001, p.13)

Department for Communities and Local Government

Good quality parks and green spaces need to be at the heart of all these policy priorities, and their importance in helping to achieve each of them should not be underestimated by those responsible for regeneration, healthcare, education, environment, sport and recreation and community safety. (DCLG4, 2002, p.13)

Frequent partners include environmental organizations, educational establishments, friends groups, local business, local trusts, sports clubs and national funding providers, in particular, the Heritage Lottery Fund. (DCLG4, 2002, p.33)

Many partnerships involving local groups had secured support from local business as well as less usual sources such as health organizations … (DCLG4, 2002, p.41)

Many parks services have teamed up with local Primary Care Trusts and organisations, such as BTCV, to fund and operate specific health-related activities. For example, healthy walks and green gyms® aimed at encouraging more people to use the environment for healthier lifestyles. (DCLG9, 2007, p.62)

7.3.3 Instrumentality theme

The content analysis of the policy documents for the Department of Health gave rise to the theme of instrumentality, so termed because the idea of contact with nature tended to be framed as a means to an end, that is to say, a means to delivering the department's aims, objectives and health targets. Thus the text in the documents concentrated on improvements in the environment "to make healthy lifestyles easier" (DH7, 2010, p.20). Physical activity was frequently mentioned in the policy documents, particularly the aim of increasing physical activity among sedentary

people. In one document, (*Healthy Lives, Healthy People: Our Strategy for Public Health in England*, DH7, 2010, p.20), an attractive environment was seen as important in making physical activity and contact with nature "part of everyday life" (third example, Box 7.3).

Early references to nature and health appeared in 2004 in the Department of Health document *Choosing Health: Making Healthier Choices Easier* (DH1). The references in that document related to the activities of gardening and conservation (notably the Green Gym® scheme) and the benefits derived from these activities for exercise and developing social networks; again this illustrates the theme of instrumentality. A further example in the narrative was about the access to green space for food growing in order to promote healthy eating and seasonal food consumption (fourth example, Box 7.3).

References to biodiversity were seldom used in Department of Health literature. Where they were used an anthropocentric view of contact with nature was taken in which the benefits were interpreted in terms of human needs, values and experiences. For example, the idea was framed in terms of access to the natural environment in order to achieve a good dietary intake and participate in regular exercise.

Box 7.3 Examples on the theme of Instrumentality

The project team identified a derelict community allotment and renovated it into a resource that the community uses to grow fruit and vegetables … (DH1, 2004, p.79)

… often people face real and perceived obstacles to doing as much as they would like. They tell us that they want more access to high-quality green spaces. (DH1, 2004, p.86)

Improving the environment in which people live can make healthy lifestyles easier. When the immediate environment is unattractive, it is difficult to make physical activity and contact with nature part of everyday life. (DH7, 2010, p. 20)

We will protect and promote community ownership of green spaces and improve access to land so that people can grow their own food … (DH7, 2010, p. 31)

7.3.4 Ecosystem Services theme

In contrast to the Department of Health documents, those published by the Department for Environment, Food and Rural Affairs placed biodiversity more centrally and took an ecosystem services stance in which the natural world is valued for its own sake alongside the services it provides to humans. This was very much in accordance with the Millennium Ecosystem Assessment (2005) (see Section 4.7). The approach advocated here was one in which humans, being dependent on biodiversity and in turn healthy ecosystems for their health and wellbeing, take responsibility for and protect the natural environment. Thus the literature from this department contained many references to *reconnecting people to nature* with the aim of engendering people who value and care for the natural environment. The examples were not limited to the physical benefits of contact with nature through physical activity in green spaces, as was the tendency in the literature from the Department of Health. Rather there were many examples of reconnecting with nature through the senses of seeing, watching, hearing, smelling, and touching nature and the benefits were discussed in terms of mental as well as physical health. The concepts 'wellbeing' and 'quality of life' appeared in the literature frequently, thus a multidimensional view of health was evident.

Table 7.7 shows that there were more policy documents, with evidence of the idea of contact with nature to enhance health, published in the year 2011 than in the other years of the search. Five of the eight policy documents for the year 2011 were DEFRA documents. The most significant of these was the White Paper, *The Natural Choice: Securing the Value of Nature* (DEFRA14, 2011); this document contained 310 of the relevant phrases out of the 1,055 total (29%). In the White Paper (DEFRA14, 2011) a stated aim was to "strengthen connections between people and nature, to the benefit of both" (p.2). The paper had a 14 page chapter specifically dedicated to 'Reconnecting people and nature' (p.1) and in the chapter many of the key messages of other DEFRA policy documents were reiterated.

Within DEFRA policy documents, more than those of any other department, there were references to nature having intrinsic value (fifth example, Box 7.4), that is to say, the idea that nature should be valued for itself and not as a utility or means to something else such as services. However in one document, *An Introductory Guide*

to Valuing Ecosystem Services (DEFRA6, 2000), the notion of valuing nature in this way was deemed to be impossible on the grounds that humans are unable to escape their anthropocentric position (example two, Box 7.4).

Box 7.4 Examples on the theme of Ecosystem Services

The [ecosystem services] approach stresses that changing any one part of our environment can have consequences, both positive and negative, and often unintended for the ecosystem as a whole. (DEFRA6, 2007, p.2)

This concept of value focuses on the contribution to human welfare – an anthropocentric view – which is seen as the most relevant to policy-making. While it is recognised that the natural environment has intrinsic value i.e. is valuable in its own right, such non-anthropocentric value is, by definition, beyond any human knowledge. (DEFRA6, 2007, p.12)

… it [nature] inspires and enriches our lives (aesthetic/spiritual/cultural services). It enriches many people's lives every day. We are uplifted by nature and our spirit is renewed by contact with it. It provides endless motivation for enquiry, from schoolchildren to scientists. (DEFRA5, 2007, p.5)

In our public consultation for this White Paper, people emphasised that they want to connect with nature: to enjoy it and protect it. (DEFRA14, 2011, p.45)

People value the natural world in many different ways and for different reasons. These include valuing it for its own sake (sometimes called its 'intrinsic' or 'existence' value), because it makes our streets and gardens more attractive, or because people enjoy experiencing nature-rich green places for recreation, whether a walk in a park or in relatively wild places such as National Parks. Others enjoy bird watching, or activities such as angling or wildfowling. Evidence supports what many people feel instinctively – that regular opportunities to experience natural environments have quantifiable positive impacts on our mental and physical health. (DEFRA15, 2011, p.14)

7.3.5 Community Green Space theme

The Department for Communities and Local Government took a number of perspectives, on the idea of contact with nature to enhance health, not seen in the other departments. For example, and unsurprisingly, the department embraced the notion of community in the widest sense and there were more references to the young, old, disabled and people of ethnic minority and their interaction with nature than in the documents of any other department. The concepts 'wellbeing' and 'quality of life' were frequently used as synonyms for the word health.

The local authority's role in providing and maintaining safe and attractive parks featured heavily in the literature such that the purpose of parks was a sizeable focus together with a discourse in a number of documents about the history of the park, their neglect towards the end of the 20th Century, and then their regeneration in more recent times. In the document *Improving Urban Parks, Play Areas and Green Spaces* attention was drawn to the reasons that parks were used by women, children, the disabled and people from ethnic minority groups (first example, DCLG5, 2002); the document highlighted a mismatch between these reasons and the promotional literature of local authorities. Also in this document a narrative about the increasing prevalence of health walks appeared (fourth example, Box 7.5) and the potential for the further exploitation of parks for physical exercise was noted (fifth example, Box 7.5).

More general discourse about green space focussed on the provision of a wide typology of green space with the aim of meeting the needs of all sectors of society, for example, allotments, city farms, tree lined avenues in addition to the more traditional park areas. Although biodiversity was mentioned fairly frequently, that is to say, more than in the Department of Health documents, there was a tendency for the emphasis to be about what people, across all sectors of society, want rather than the responsibility of society to maintain healthy ecosystems (sixth example, Box 7.5).

Box 7.5 Examples on the theme of Community Green Space

The existence of wildlife, including ducks and squirrels, together with educational opportunities that such spaces afford were identified as being especially important for children and were specifically mentioned by women, disabled people and people from ethnic minority groups. The smell of freshly cut grass and flowers was mentioned by disabled people. It is, however, clear that although these were the most mentioned reasons for visiting urban green space … this was not always the case in the information available from the local authorities. (DCLG5, 2002, p.41)

… green spaces offer important opportunities for people to make contact with nature, to take exercise by involvement in both passive and active recreation, and to be involved in many kinds of social, cultural and community activities. (DCLG5, 2002, p.80)

… green spaces can be shown to play an important part in wildlife and habitat conservation, so helping to meet biodiversity objectives, as well as contributing to landscape and cultural heritage, improving urban air quality and ameliorating the urban climate, and reducing noise levels. (DCLG5, 2002, p.80)

Urban parks and other green spaces are being used by some towns and cities to promote healthy living. This may, for example, be tied to encouraging more healthy lifestyles through growing local food in community green spaces or allotments. Health walks in parks, either self-guided or lead by rangers or other officers, are increasing in popularity. In some places these are voluntary, but in others 'health walks on prescription' can be provided by GPs. (DCLG5, 2002, p.83)

Parks still have a large, and to some extent unexploited, role in encouraging physical exercise, beyond the obvious use of weekend pitch sports. (DCLG5, 2002, p.83)

Today people want a more diverse range of green spaces that cater for their social, educational and physical needs and changing lifestyles. They want city farms and community gardens, wildlife areas and woodlands, allotments and tree-lined streets, as well as parks, sports grounds and play areas. (DCLG7, 2006, p.37)

7.3.6 Curricula theme

The discourse in the documents for the Department for Education was predominately about reconnecting children with nature by designing a curriculum that uses the outdoors for learning, notably first hand experiences of the natural environment, and learning that is underpinned by ecological thinking and an ecosystem approach (third example, Box 7.6).

In 2010, the Department for Education document *Top Tips for Schools to Engage with Biodiversity* (DE4, 2010) suggests that biodiversity can help with an understanding about citizenship for 11-14 year olds and that an ecosystem approach at secondary level helps pupils make connections (fourth example, Box 7.6). Further, for disaffected young people who are not in education, employment or training then environmental programmes were considered to offer opportunities to develop land based employment skills (fifth example, Box 7.6).

Box 7.6 Examples on the theme of Curricula

Concern that young people have become distanced from nature has increased in recent years. With fewer and fewer pupils having the opportunity to experience rural life first hand … (DE1, 2003, p.1)

… with claims that significant numbers of pupils don't know that milk comes from cows, or that carrots grow in the ground, the need to reconnect them with nature is unquestionable and clearly urgent. (DE1, 2003, p.3)

Most National Curriculum subjects can be taught outdoors … First-hand experience

of growing and the natural environment forms an essential element of the Foundation Stage curriculum. And at Key Stages 1-3, the geography syllabus already requires pupils to participate in first-hand experiences of the natural environment beyond the realms of the classroom.
(DE1, 2003, p.2)

Biodiversity can also be the context for citizenship discussions, and when approaching the Key Stage 3 cross-curriculum dimensions. In addition, at secondary level it can help develop an ecological thinking approach (systems thinking and how everything is connected). This can be expanded by looking at the chains within ecosystems – for example, the impact of natural processes on human well-being, in relation to food or water, can help pupils to understand the connections and inter-relationship between species, habitats, and people. (DE4, 2010, p.5)

… gardening, woodland management … offer practical routes to learning and enable participants to feel they are making a valued contribution to their community. Land-based programmes also offer mental health benefits through green exercise and are a particularly effective way to develop basic skills for employability in disaffected young people. (DE5, 2010, p.23)

7.4 Discussion

The idea of contact with nature to enhance health has diffused into the government policy documents of four of the five departments searched. There was relatively minimal evidence of the diffusion of the idea within the Department for Culture, Media and Sport. Greenhalgh (2005) has drawn attention to the limitation within diffusion studies for researchers to focus on ideas and innovations that diffuse rather than study ideas and innovations that 'fail' to diffuse: this limitation is known as the pro-innovation bias (Rogers, 2003). However, this is somewhat of a false dichotomy as this content analysis has shown by looking across different government departments. The process of policy making entails policy makers intentionally selecting ideas and research evidence to help them frame their policy rhetoric in relation to the broad goals of their specific department. Not only is the figuration of government policy makers interdependent with various research figurations, the pattern of these interdependencies will vary across departments, as will the horizontal pattern of interdependencies across government departments, some departments being more strongly interdependent than others. The outcomes of these multiple processes is that, depending on the goals of each department and its relationship with other government departments, the idea of contact with nature to enhance health will be framed in particular ways and with a greater or lesser degree

of emphasis. Thus, a more adequate way of viewing diffusion in this specific example is in terms of varying degrees (and forms) of diffusion rather than success or failure to diffuse.

Furthermore, what the content analysis of selected policy documents has shown is that policy makers have relative power to select ideas and research evidence to address their departmental goals. The limited visibility in the policy documents of the Department for Culture, Media and Sport can be explained in terms of the selection of ideas and research to meet the department's main goals, which historically have tended to be focused on the three domains within its title (culture, media, and sport). Thus, the stated aim of the department is to "improve the quality of life for all through cultural and sporting activities, support the pursuit of excellence, and champion the tourism, creative and leisure industries" (DCMS, 2012, p.2), representing a dynamic and broad agenda. Study 1 showed that research has been published in the research literature, (for example, in the Journal of Leisure Research and the journal Leisure Science appeared in the list of the top 38 publication sources). However, policy makers in the DCMS have, relatively, the power to focus on key departmental goals. Thus, the relatively powerful interests of those in key positions can give emphasis to the historically important areas of media and sport, for example, in relation to the British Broadcasting Corporation (BBC) and sporting events such as the Olympics and the Fédération Internationale de Football Association (FIFA) World Cup, thereby limiting the extent to which new interests which do not converge with this agenda are selected. Further comment about this is made in Sub-study 3 (Chapter 8, Section 8.3) when what happens to the idea within organisations is explored.

The search for relevant policy documents on the government department websites was limited to the search dates available. This was from the mid to the end of the 1990s onwards for four of the five departments. The earliest search date available for the Department for Environment, Food and Rural Affairs was 2002. It is conceivable that the emergence of the idea in the policy literature for this department prior to the year 2002 may not have been captured. It was for this reason (and in view of the importance of the Department for Environment, Food and Rural Affairs in its subsequent promotion of the idea of contact with nature to enhance health as

revealed in the policy analysis) that a hard copy of the White Paper *This Common Inheritance. Britain's Environmental Strategy* (Department of the Environment, 1990) was scrutinised for the idea of contact with nature to enhance health. White Papers are significant policy documents because they contain important policy statements about the strategic direction of the department. No other White Papers on the natural environment were published between 1990 and the publication of the White Paper *The Natural Choice: Securing the Value of Nature* (DEFRA14, 2011). In the 300 pages of the earlier White Paper the main theme was one of *protecting* the environment alongside economic growth. The document was presented to Parliament by a total of ten Secretaries of State and one Minister, including the Secretaries of State for Environment, Health, Education, and Science; it was ostensibly an across department White Paper. Within the document there was no evidence of the idea of contact with nature to enhance health. This is in contrast to the contents of the White Paper *The Natural Choice: Securing the Value of Nature* (DEFRA, 2011) just over 20 years later in which the value of nature is seen as central to enhancing the environment, economic growth, and personal wellbeing. This shift can in part be explained by the convergence from the 1980s and 1990s onwards of environmental and health agendas (see Chapter 4) and the convergence, also, of policy agendas from various departments.

A limitation of Sub-study 2 is that only those policy documents uploaded onto the government websites at the time of the search were included in the results; the overall search strategy was dependent on a full data set being on the websites. Notwithstanding this possible limitation there is evidence that the idea has appeared in policy and that the idea has been promoted by policy makers across different sectors in many and varied ways.

The results indicate that the idea of contact with nature to enhance health has been taken up in government policy documents from the year 2000 onwards with a peak in the number of publications per year in 2011. In comparison, results from Sub-study 1 show that the empirical research literature started to appear in the 1970s with a peak in the number of research publications per year in 2005. Although not suggesting linearity, the process of diffusion from research into national policy spans the decades from the 1970s: a time lag of 30 years. As previously discussed, the

relationship between research evidence and policy has historically been somewhat opaque, with ideology being the main ways in which policy rhetoric has been formulated. It was not until 1997 that the then Labour government explicitly argued for the use of evidence in policy (Cabinet Office, 1999). A much shorter time lag, one of only six years, is between the year of peak production of the research literature (2005) and the peak appearance in government policy documents (2011); reflecting the increasing interdependency of figurations of researchers and policy makers.

Morris, Wooding and Grant (2011) have reviewed the literature that quantifies time lags in the process of health research translation into policy and practice including public health interventions. Although the authors were able to identify, from reviewing 23 studies, that the mean time lag from research evidence to *practice* was 17 years (compared to a lag of 30 years for the research evidence to *policy* in this study), they noted that the 23 studies reviewed were not directly comparable with each other because the design parameters were different. In addition they noted that the research into time lag is generally underdeveloped and cautioned about taking a linear approach because research translation is a "messy, iterative and complex process" (p.510).

A number of explanations are offered for how and why the idea of contact with nature has diffused into the policy documents of the four government departments. These explanations seek to account for what is a selective, reiterative and interdependent process. Dopson (2006), in an article on evidence based health care, argues that there is no such thing as *the* evidence. In discussing the difficulties of diffusion of knowledge across professional boundaries Dopson, in the same article, makes the point that there are "… bodies of evidence which are capable of differing interpretations" (p.85). So even with an example such as the use of aspirin to treat heart attack, a more singular idea than that of contact with nature to enhance health, the research evidence will be interpreted differently by different practitioners who will bring "tacit and experiential knowledge" (p.85) to bear on any treatment regimen. Similarly policy makers across different policy domains have tended to select and interpret evidence in particular ways that allow them to further their

department's goals, integrating it alongside their own tacit and experiential knowledge.

From Study 1 it was apparent that there were multiple forms of evidence relating to the idea of contact with nature to enhance health, for the idea had been researched in different ways and by different disciplines using a variety of methodologies that reflected the interests of researchers at that time. The breadth of evidence has enabled policy makers to interpret the idea in ways that further the purposes of each department. In this regard policy makers were using evidence informed ideas to pursue their political agendas and thereby optimise their power base to varying degrees across the departments studied. This selection and interpretation went beyond language and terminological differences as there tended to be a marked difference in the way the use of the idea was framed: from contact with nature to enhance *health* (the position of the Department of Health), contact with nature to enhance health *and nature* (the stance of the Department for Environment, Food and Rural Affairs), contact with nature to enhance health *and community development* (Department for Communities and Local Government), through to contact with nature to enhance health *and learning* (Department for Education).

There was only one exception to the way that the idea was positively framed in the policy documents. The example is taken from the Department for Environment, Food and Rural Affairs:

> The [ecosystem services] approach stresses that changing any one part of our environment can have consequences, both positive and negative, and often unintended for the ecosystem as a whole. (DEFRA6, 2007, p.2)

This example presents a nuanced account of ecosystem processes and makes reference to the unintended consequences of human actions. This example accords with one of Elias's five interconnecting principles of his sociological theory – that the outcome of human actions is most often unplanned and unintended (van Krieken, 2001).

From the same department there was a discourse relating to the idea of contact with nature to enhance health that reflected philosophical and theoretical ideas. To some degree, this is unusual for a policy document:

> This concept of value focuses on the contribution to human welfare – an anthropocentric view – which is seen as the most relevant to policy-making. While it is recognised that the natural environment has intrinsic value i.e. is valuable in its own right, such non-anthropocentric value is, by definition, beyond any human knowledge. (DEFRA6, 2007, p.12)

Dewey (1929) argues that humans are continuous with nature but differentiated by their capacity to develop reflective intelligence. Similarly, Elias (2009) argues that, because of such capacity, humans are the only ones that can assume the responsibility and duty of care for nature (and thereby safeguard nature's welfare). To a greater or lesser extent, policy makers have tended to give an anthropocentric value to nature, the degree of value being based on vested interests, other values and "the situation of humanity, and especially its power relationships" (Elias, 2009, p.65).

In an example from the Department for Education there are references to how pupils can develop an understanding of biodiversity and to think ecologically, that is to say, the "connections and inter-relationship between species, habitats and people" (DE4, 2010, p.5). Other references stressed the need for children to re-connect with nature through first hand experiences (DE1, 2003, p.1 & 2). Elias (2006) writes in detail about experiencing nature in his essay *On Seeing in Nature* in which he uses the subject matter of nature to illustrate the principles of education "Learning to see nature does not mean being passively moved by the subject matter, but actively taking hold of it and seeing it in a way which evaluates according to scientific criteria" (p.14).

These three examples have illustrated the breadth of ideas associated with the diffusion of idea of contact with nature to enhance health in the policy documents analysed. At times the discourse went beyond the research evidence and encompassed philosophical and pedagogical ideas.

In Chapter 3, Section 3.5, the work of Smith (2013) was referred to. Smith (2013) argues that favourable research based ideas are promoted in policy, whereas ones that do not accord with the ideology of a government department are filtered and blocked. In this study there are many examples of the idea of contact with nature to enhance health being reframed by policy makers to suit the ideologies of the different government departments; there is also evidence of diffusion across four of the five departments.

Further, Smith (2013) found that if an idea does not fit with the remit of a department then the movement of the idea from research into policy is difficult. It is suggested that the idea of contact with nature to enhance health has been taken up widely because the idea can be framed to fit the remit of the four departments. The following aims were taken from the websites of the four departments within which the idea had diffused (see Appendices D, E, G, & H):

- to improve England's health and well-being (DH, 2012);
- to enhance the environment and biodiversity to improve quality of life (DEFRA, 2012);
- to foster prosperous and cohesive communities, offering a safe, healthy and sustainable environment (DCLG, 2012);
- to achieve a highly educated society in which opportunity is equal for children and young people, no matter what their background or family circumstances (DE, 2012).

Collectively the remit of these departments embraces concepts of health, wellbeing, quality of life, the value of the environment and biodiversity, sustainability, cohesive communities, and education. The idea of contact with nature to enhance health has been linked to all these concepts by policy makers.

The department with the closest remit to the idea of contact with nature to enhance health was the Department for Environment, Food and Rural Affairs. This department had more policy documents with references to the idea of contact with

nature to enhance health than the other departments: there were 16 out of 47 (34%). Of the 1,055 phrases relevant to the idea of contact with nature to enhance health across the 47 policy documents, 629 (60%) were from the Department for Environment, Food and Rural Affairs. Thus, there was more evidence of policy makers using the idea of contact with nature to enhance health from the Department for Environment, Food and Rural Affairs and the policy goals of this government department converging with the public health idea than there was from the Department of Health.

A further point expounded by Smith (2013) is that of recycling in which ideas are taken up and then re-presented in future policy documents, as if for the first time, thereby giving the impression of innovation. This was particularly noticeable in the Department for Environment, Food and Rural Affair's White Paper, *The Natural Choice: Securing the Value of Nature* (DEFRA14, 2011) in that document was a culmination of many of the previous policy documents from this department. For example, in the following extract from this White Paper similar content, if not the exact wording, has appeared in other Department for Environment, Food and Rural Affair documents.

> Nature benefits humans. This is also true in reverse. While the natural environment can do much to benefit our health and education and make our daily lives happier and richer, we also have an opportunity to protect and improve it. And we have a responsibility to do so if we want to continue to enjoy it. (DEFRA14, 2011, p.45)

Another reason that the idea has diffused into the policy documents of four government departments is that policy makers can use the idea of contact with nature to present their policy statements in a positive (and perhaps in a common sense and uncontroversial) light. From the bibliometric search of Sub-study 1 it was evident that the publications were almost exclusively positive about the idea; there was hardly anything in the journal articles of a counter view to the idea of contact with nature to enhance health, along the lines of nature being 'red in tooth and claw' (Elias, 2009). Any negativity was related to the fear factor associated with being outdoors, for example fear of crime in woodland areas or in overgrown shrub areas of parks. Policy makers have tended to present the idea in attractive ways.

In the policy documents of all departments but the Department for Culture, Media and Sport the findings from research were referred to fairly frequently but seldom by direct citation. The limited use of citations to the original source material is similar to the way ideas and research are reported by journalists in the media, that is to say, briefly and subjectively in order to capture attention, be persuasive or further a cause. For example the research referred to under the DCLG heading in Box 7.1 "Time spent in contact with nature has been shown to help mental well-being, with people reporting feeling much happier after a walk in a park than they do after a shopping trip" (DCLG12, 2009, p.15) is a reference to a study appearing in a report on Ecotherapy (Mind, 2007). The findings of the primary study report that for a group of mental health service users exercising outdoors, rather than indoors, was "more enjoyable, more therapeutic and had a positive effect on participants' mental health and wellbeing" (p.25). Thus it can be seen that the participants, that is to say, the service users are referred to in the policy document as 'people' thereby removing any possible stigma attached to the phrase 'mental health service users' and broadening the relevance of the findings to a wider audience. This is an example of shifting asymmetrical power balances through the use of language to influence others (1978).

Bøås and McNeill (2004) make the case in their work that powerful organizations, such as those responsible for policy development, use framing to determine how an issue is viewed:

> The exercise of framing is composed of two parts: one, drawing attention to a specific issue (such as the environment or urban unemployment); two, determining how such an issue is viewed. A successful framing exercise will both cause an issue to be seen by those that matter, and ensure that they see it in a specific way. And this is achieved with the minimum of conflict or pressure . . . An effective 'frame' is one which makes favoured ideas seem like common sense, and unfavoured ideas as unthinkable. (p.1)

The research evidence appeared in a modified and generalised form, which used non-academic language. For example, "Even small amounts of green space can facilitate relaxation/recovery from stress" (DE3, 2010, p.78), "Green exercise creates an immediate improvement in self-esteem" (DH6, 2008, p.19), "Urban parks and other green spaces are being used by some towns and cities to promote healthy living" (DCLG5, 2002, p.83), and "Accessibility to nearby attractive public green space and

footpaths is more likely to increase levels of walking" (DH6, 2008, p.19). Thus the idea of contact with nature was framed to seem "like common sense" (p.1), an approach that Bøås and McNeill (2004) argue, occurs with favoured ideas. Drawing on Elias, this illustrates how policy makers have degrees of power to frame ideas – including scientific research - to suit their purposes.

This approach to policy writing, that is to say, the reframing of the research, was evident in many of the policy documents and is congruent and consistent with the work of Weiss, Murphy-Graham, Petrosino, and Gandhi (2008) who have identified that "most studies seem to be used in selective bits, reinterpreted to fit existing preferences or ignored" (p.30).

In Sub-study 1 the research publications were categorised into four themes based on the different aspects or topic areas of investigation about the idea of contact with nature to enhance health. Although the research was seldom cited directly in the policy documents, the research themes identified in Sub-study 1 could be identified from the narrative. For example the following extract, which is informed by research, is an example of the theme Psychological Benefits:

> … recovery from mental fatigue is greater through viewing nature than by watching TV, reading magazines or walking in an urban environment and viewing nature restores the area of the brain that copes with direct attention (concentration). (DEFRA12, 2011, p.31)

Much of the time the idea used in the documents was as a policy response to public health problems such as obesity, the stress of urban living, inactivity and social isolation with the aim of increasing overall levels of wellbeing. The idea, for example, was being taken up by policy makers to address individual lifestyle issues:

> Linking activities on healthy weight to initiatives relating to the environment and sustainability – allotments and food growing projects can, for example, support environmental objectives and at the same time provide opportunities for people to be more active and eat more healthily. (DH8, 2011, p.28)

Policy responses using research from large scale population studies (Theme 4 in Sub-study 1) were also evident, albeit often indirectly. For example, the equal sixth most cited publication in Sub-study 1, a study by Mitchell and Popham (2008), was about

the effect of exposure to the natural environment on health inequalities. In this and similar studies socioeconomic, health inequality, and/or mortality data is typically used to establish causal links between contact with nature and health. In the document *Healthy Lives, Healthy People: Our Strategy for Public Health in England* (DH7, 2010) the term 'health inequalities' was mentioned 36 times and several times in relation to the environment or green space:

> Unsafe or hostile urban areas that lack green spaces and are dominated by traffic can discourage activity. Lower socioeconomic groups and those living in the more deprived areas experience the greatest environmental burdens. (DH7, 2010, p. 20)

> Access to green spaces is associated with better mental and physical health across socioeconomic groups. (DH7, 2010, p. 40)

The linking of the idea of contact with nature to enhance health to health inequalities was also seen in policy documents from the Department for Environment, Food and Rural Affairs, and the Department for Communities and Local Government. For example:

> While many people enjoy pleasant green spaces near where they live, this is not the case for everyone. People in deprived areas are nearly six times less likely than those in affluent ones to describe their area as 'green'. Those living in deprived areas, minority ethnic communities, elderly people and those with disabilities have less access to green spaces or tend to use them less. The benefits of spending time in the natural environment are not open to everyone, which can contribute to health and other inequalities. (DEFRA14, 2011, p.51)

> Parks and green spaces … can also help to achieve wider social objectives to tackle childhood obesity, reduce health inequalities for those in the poorest communities and encourage social interaction among children. (DCLG9, 2007, p. 52)

Thus policy makers used the idea of contact with nature to enhance health as a policy response, in three of the five departments, to address the problem of health inequalities. And also in a general way examples of the idea of contact with nature to enhance health were related to economic development:

> Nature is a complex, interconnected system. A healthy, properly functioning natural environment is the foundation of sustained economic growth, prospering communities and personal wellbeing. (DEFRA14, 2007, p.3)

In this study, Sub-study 2, it has been shown that the idea of contact with nature to enhance health appears in the policy documents of four government departments. The idea has been liberally taken up and framed to suit the purposes of each department. In the next chapter, the findings from Sub-study 1 and Sub-study 2 are used to inform Sub-study 3. For example, the research and policy literature set the context for examining the types of organisations and partners that are promoting and/or delivering health related contact with nature activities, and the types of activity they are engaged with.

Chapter 8: Sub-study 3 - The appearance and framing of the idea of contact with nature to enhance health in organisations in Greater Manchester

8.1 Introduction

The aim of Sub-study 3 was to explore the appearance and framing of the idea of contact with nature to enhance health in organisations in Greater Manchester, that is to say, to identify organisations that had health messages on their websites relating to the provision and/or promotion of contact with nature activities. The sub-study contributes to the overall research question in terms of understanding the diffusion of the idea of contact with nature to enhance health by examining how people in organisations have acted upon the idea and how they are using the idea in their work. The following research questions were addressed:

- What types of organisations are using the idea of contact with nature to enhance health in their work?
- What are the different types of activity?
- How and in what ways is the idea revealed by these organisations?

Study 3 was undertaken through a content analysis (see Chapter 5, Section 5.7 for a discussion about content analysis) of the websites of organisations within the case study area.

8.2 Method

Greater Manchester was chosen as the case study area because it was viewed as large enough to reveal a range of contact with nature activities, small enough to be manageable for search purposes and illustrative of a large conurbation in England.

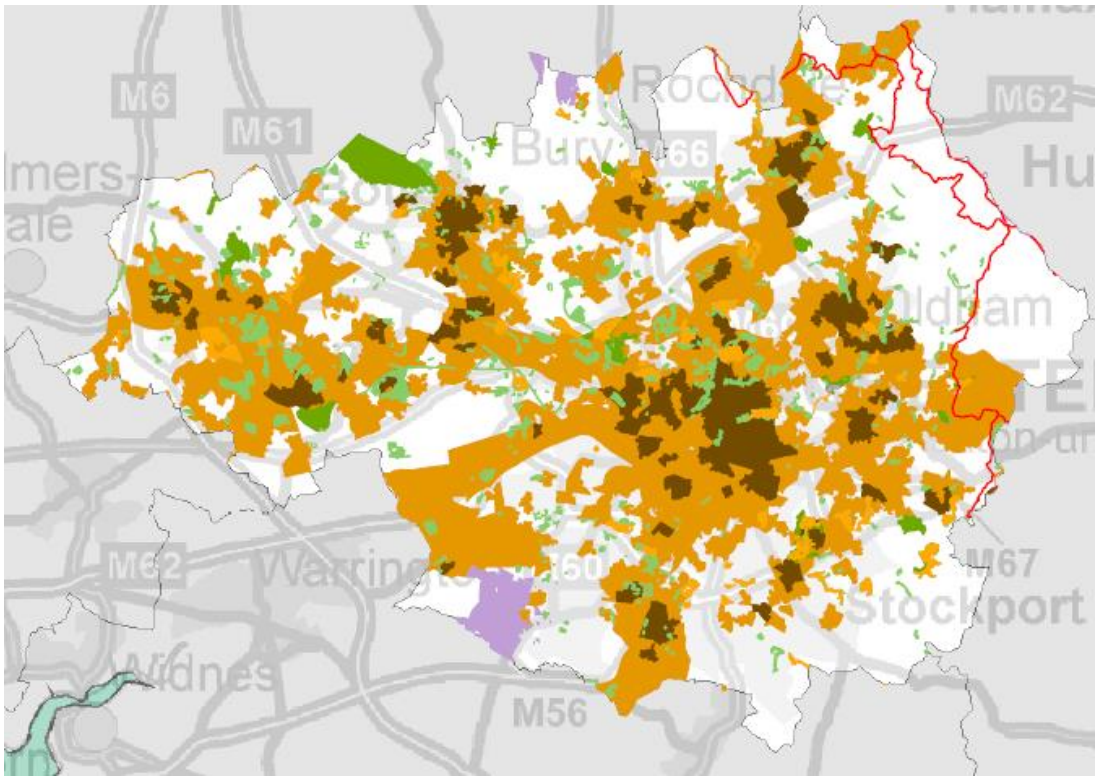
Greater Manchester is a predominantly urban area in north west England which comprises ten districts: the cities of Salford and Manchester and the boroughs of Bolton, Bury, Oldham, Rochdale, Stockport, Tameside, Trafford, and Wigan. Figure 8.1 shows the location of Greater Manchester within England and Figure 8.2 shows how the districts are positioned. In 1986 the ten districts became unitary authorities; consequently Greater Manchester lost its administrative authority but retained the

status of a geographical and ceremonial county. More recently under the DevoManc initiative the reappearance of local government structures that span the ten districts is being considered (Dudman, 2014). Greater Manchester has an area of 1,276 square km and a population in 2011 of 2.7 million (Encyclopaedia Britannica, 2014).

Figure 8.1 The location of Greater Manchester within England (Ordnance Survey Open Data, 2010)

Figure 8.2 Area map of Greater Manchester showing the ten districts

Greater Manchester is bordered in part by a National Park and an Area of Outstanding Natural Beauty: the Peak District National Park covers part of the east and south and the Pennines border the north and north east. Although predominantly an area of high urban density the land use within Greater Manchester is also suburban and parts are rural and semi-rural. Figure 8.3 shows the 10% most deprived areas (in dark brown) and the 25% most deprived areas (in dark orange) in the county. The largest deprived area is located within the City of Manchester. The position of the deprived areas can be seen relative to national trails, national reserves and accessible woodland, local nature reserves, country parks and National Trust areas.



Key:
National Trust Land
Country Park
National Nature Reserve/Accessible Woodland
Local Nature Reserve
25% Most Deprived Areas
10% Most Deprived Areas
National Trail

Figure 8.3 Greater Manchester land use and urban density (Natural England, 2012, Open Government Licence)

During July to October 2013 a search was undertaken of the websites of a range of organisations within Greater Manchester. The full search strategy for locating health related contact with nature activities in Greater Manchester is set out in Appendix I. The websites were searched to determine if the organisations were involved in the provision and/or promotion of activities which involved contact with nature for the enhancement of health. Websites were the main way in which such activities were promoted. This was confirmed by a visit to two of the public libraries within Greater Manchester (Wigan and Manchester) in July 2013. Very little literature about local activities and events was available in paper format; the library staff in both libraries referred to the use of websites to ascertain what was provided in the area. Websites were identified via the following mechanisms:

- From government policy documents (Sub-Study 2);
- As listed as part of the Local Nature Partnership;
- Through snowballing.

Snowballing is a term Bryman (2008) uses to mean "a non-probability sample in which the researcher makes initial contact with a small group of people … and then uses these to establish contact with others" (p.699). In this study the snowballing was at an organisational level, that is to say, through accessing websites that referred to other websites.

Activities and events were also identified and explored via:

- Grey literature, for example, the National Trust Magazine (Summer 2013), and Nature's Home (Summer 2013), the magazine of the Royal Society for the Protection of Birds (RSPB);
- Fieldwork, for example, a visit to the Royal Horticultural Society (RHS) Tatton Flower Show (July 2013), participation in a RSPB bird and butterfly walk (July 2013), a visit to the Dig the City event (August 2013), a visit to Manchester Museum (August 2013), and a visit to Dunham Massey National Trust estate (September 2013);
- Personal contact with the representatives of organisations.

8.3 Results

Within Greater Manchester 36 organisations were identified as having health messages on their websites relating to the provision and/or promotion of contact with nature activities. The organisations identified were varied in terms of mission, aims and purpose.

To answer the question *What types of organisations are using the idea of contact with nature to enhance health in their work?* the organisations were organised according to sector. There were 19 organisations from the statutory sector, 16 from the third sector ('not for profit') and one, Manchester Forest Schools, comprised

independent practitioners. All ten local authority districts were involved in both the provision and promotion of activities. Some of the National Health Service (NHS) Trusts, in the Greater Manchester area, were involved in the direct provision of activities, notably Health Walks with one example of a NHS Trust, Manchester Mental Health and Social Care Trust, providing Horticulture. NHS Trust involvement in other ways was at a strategic level via commissioning or as a partner organisation. Sixteen (44%) of the organisations were conservation/wildlife based agencies.

To answer the question *What are the different types of activity?* all activities during July to October 2013, once recorded, were classified under six themes namely: 'Conservation', 'Horticulture', 'Play and Early Years Development', 'Health Walks', 'Wildlife Identification Walks', and 'Other Leisure'. Table 8.1 shows examples of the types of activity and the theme to which they were allocated. In the final column, organisations that had health messages on their websites relating to the provision and/or promotion of contact with nature activities are listed by theme.

Table 8.1 Example activities, themes to which they were allocated and corresponding provider and/or promoter organisations during July to October 2013 in Greater Manchester

Examples of the types of activity	Activity theme	Organisation providing and/or promoting the activity theme
Drystone walling Footpath improvements Grassland management Habitat management Hedge laying Tree planting Wildflower planting Woodland conservation	Conservation	Canal and River Trust Community Forest – Pennine Edge DEFRA Lancashire Wildlife Trust Local Authorities (Bury, Tameside) Prison Service The Conservation Volunteers
Community farms Community gardening Working on an allotment	Horticulture	Groundwork Dig the City Local Authorities (Stockport, Wigan) Manchester Mental Health & Social Care Trust Prison Service Sure Start Target Wellbeing The Conservation Volunteers
Bug hunting Campfire cooking Den building Nature detectives Shelter building Stream/pond dipping Tool use Tree climbing Wildlife tracking	Play and Early Years Development	Community Forest – Red Rose Lancashire Wildlife Trust Local Authorities (Manchester, Tameside, Wigan) Manchester Forest Schools National Trust Sure Start
Organised and independent walks in country parks, parks, green spaces and along public footpaths	Health Walks	Lancashire Wildlife Trust Local Authorities (Bolton, Bury, Oldham, Salford, Stockport, Trafford, Wigan). National Health Service Ramblers 'The Friends' of parks and nature reserves University of Manchester
Bat walk Bee keeping/ bee walk Bird walk Butterfly identification walk Flora walk Fungi walk Tree walk Wildlife walk Woodland walk	Wildlife Identification Walks	Friends of the Earth Greater Manchester Local Record Centre Lancashire Wildlife Trust Local Authorities (Manchester, Wigan) Manchester Museum Royal Society for Protection of Birds The Conservation Volunteers The Woodland Trust
Willow weaving Wood carving Canal festival Cycling Fishing Improvements to the local environment Park visits	Other/Leisure	Community Forest – Red Rose Local Authorities (Rochdale) Natural England Salford Friendly Anglers The Conservation Volunteers Visit Manchester

As the months chosen for the search included July and August 2013, that is to say the school holidays, many of the activities were targeted at children and families, for example the Wild Wood Holiday Club (Manchester Forest Schools), Nature Detectives (Red Rose Community Forest), Den Building (Manchester Council), Wellies and Worms (Tameside Council), and Family Bushcraft Adventure (Wigan Council). These types of activity appear under the theme 'Play and Early Years Development'.

Other activities were less seasonal and targeted at the adult population, for example Become a Volunteer Ranger (Rochdale Council), Green Gyms® (The Conservation Volunteers), and Mud to Muscle in which practical tasks from woodland conservation to grassland management were undertaken (Lancashire Wildlife Trust). These types of activity were allocated to the 'Conservation' theme as their primary focus involved preservation and/or restoration projects.

Activities, again targeted at adults, that focussed on growing food (for healthy eating) and flowers for their aesthetic value appear under the theme 'Horticulture': examples include Active Choices Allotment (Groundwork), Greener on the Outside (Prison Service), Growing for Health (Target Wellbeing).

Walking was an activity that appeared more than any other activity. The walks were of two distinct types: i) health walks in which the focus was on walking for health reasons, for example, to get fit or to aid recovery from an illness, with a stated secondary aim on some of the websites about socialising and meeting new people; and ii) wildlife identification walks whereby the main aim was to learn more about the local flora and/or fauna and identify different species. These different types of walking activities were therefore allocated to the themes 'Health Walks' and 'Wildlife Identification Walks' respectively.

It was noted during the data collection stage of the study that the publicity on the websites about the wildlife identification walks contained health promotion messages. The wildlife identification walks were delivered by conservation/wildlife based agencies and local authority agencies predominantly (see Table 8.1). These

types of organisations utilised the idea of contact with nature to enhance health when promoting the wildlife identification walks.

The promotion of the health walks was more variable in that the publicity about them did not always refer to the benefits of walking within the context of the natural environment or green space. Thus at times the health walks were framed in such a way that the term functional engagement (Barton & Pretty, 2010) was applicable, that is to say, incidental exposure to nearby nature whilst engaging in the walking activity. Appendix J shows the results of searching the Walking for Health website. Walking for Health is a national scheme led by the Ramblers and Macmillan Cancer Support which, in partnership, work with individuals, groups and organisations to establish and deliver health walks. On 13 October 2013, the date of the search, 20 organisations were listed as delivering health walks in the Greater Manchester area. Of these half used the idea of contact with nature or green spaces in some way to promote the health walk. The example below appeared on the Walking for Health website under Levenshulme Health Walks and illustrates the use of the idea. The delivering organisation was the local voluntary group 'The Energy Box':

> The outdoors is a natural medicine. Growing medical evidence shows that access to the natural environment improves health and wellbeing, prevents disease and helps people recover from illness … we take Fallowfield Cycle loop towards Reddish Vale and enjoy the beautiful scenery of this nature reservoir. (Walking for Health website)

The varied use of the idea of contact with nature to enhance health in health walk schemes is captured in Box 8.1 which gives information from a Ramblers health walk leader.

Box 8.1 The use of the idea of contact with nature to promote health walks

The following information is provided following personal contact with a Ramblers health walk leader from the Greater Manchester area.

In 2007 the Ramblers organisation secured a major grant from the Big Lottery Fund for their scheme Get Walking Keep Walking. The scheme ran in areas of high urban density such as Manchester, Sheffield, Birmingham and South East London and involved inactive people undertaking a series of short walks (about 1.5 miles) over a period of 12 weeks. The first 4 weeks were accompanied by a walk leader, for weeks 5-11 the group were self-managing and then the leader accompanied them again on the final walk. From 2012 onwards Ramblers began to host the Walking for Health initiative in partnership with Macmillan Cancer Support (taking over from

Natural England and the British Heart Foundation).

The leader, an ex-Geography teacher, had scoped many of the walks for the Get Walking Keep Walking scheme in the Manchester area. During the leadership of her own walks she was very keen to add value to the walk by pointing out to the participants various features of the landscape including the identification of flora and fauna where known. She commented that this approach was largely determined by the interests and expertise of each individual walk leader and that whilst the health benefits of walking were always discussed, direct engagement with nature and the natural features of the landscape were not necessarily promoted. Thus the walk leader felt that the idea of contact with nature to enhance health was not always deployed.

The final activity theme was called 'Other/Leisure'. The activities wood carving and willow weaving were classified under this theme. These were delivered by the Red Rose Community Forest, a conservation agency, but the activities themselves could not be classed as conservation hence the allocation to 'Other/Leisure'. This theme also captures general leisure activities such as the Rochdale Canal Festival which was on at the time of the search and activities such as cycling, fishing and park visits, all of which were promoted using the idea of contact with nature to enhance health. It was noted that the organisation Visit Manchester (the tourist board for Greater Manchester) used the idea to market Manchester and surrounding areas. Although research has been published in the leisure field (for example in the Journal of Leisure Research and the journal Leisure Science, which appeared in the list of the top 38 publication sources) Sub-study 2 revealed that there was very little diffusion of the idea in the policy documents of the Department for Culture, Media and Sport (the department with a remit for leisure and tourism). However, at a local level, there was evidence that the idea of contact with nature to enhance health was being used to promote leisure and tourist activities. Thus the idea had diffused into organisational activities without it necessarily being a policy priority in the DCMS.

To answer the question *How and in what ways is the idea revealed by these organisations? a* content analysis of the information on the websites was undertaken (see Chapter 5, Section 5.7 for further information on content analysis). Examples, of how and in what ways the idea of contact with nature to enhance health was revealed in the information on the websites that were searched, are given in situ in Appendix K. A number of themes were identified from the discourse of the website

information as follows: 'Connectivity', 'Research Evidence', 'Benefits', 'Wellbeing/Quality of Life', 'Ecosystem Approach', 'Across Sector Partnership', 'Practitioner Diversity', and 'History'.

8.3.1 Connectivity theme

The theme 'Connectivity' was assigned to any phrase relating to the word *connect* or its derivatives, for example, connected, disconnected, connection or disconnection. This theme was a common one in the literature. In the White Paper *The Natural Choice: Securing the Value of Nature* (DEFRA, 2011) the word *connect*, or one of its derivatives, is used 65 times. The use of this word within descriptive passages on the websites, and the context in which it was used, reflected similar framing to its use in the White Paper, for example:

> Our natural environment gives us a sense of place, pride and identity. Nature inspires and moves us. Connecting with nature helps children learn, and improves people's health and wellbeing. We know instinctively that we have much to gain by connecting with nature … (DEFRA, 2011, p.45)

> There are many ways to connect with the natural environment. An outdoor experience can benefit your health, enable you to get closer to nature, be used as an educational opportunity or help with building community partnerships – the list is almost endless. (Natural England website)

The phrase *contact with nature* was also assigned to the theme of 'Connectivity'. This phrase, too, appeared in the White Paper but was used fewer times. Again, there were some similarities in the way the phrase was used in the White Paper and on the websites, for example:

> … contact with nature enhances children's education, personal and social skills, health and wellbeing, leading to the development of responsible citizens. (DEFRA, 2011, p.12)

> Everyday contact with nature is important for people's well-being and quality of life. Providing Local Nature Reserves helps to increase awareness and enjoyment of our native wildlife and offers people special opportunities to discover, learn about, and enjoy their local environment. (Bolton Council website)

8.3.2 Research Evidence theme

Research relating to the idea of contact with nature to enhance health underpinned some of the information and for this reason 'Research Evidence' appears as a theme. Phrases such as the following were seen on the websites:

> Research has shown … (Thameside Council website)
>
> There is a wealth of evidence … (Wigan Council website)
>
> One study found … (Friends of the Earth)
>
> … researchers have demonstrated … (Friends of the Earth)
>
> … there is a growing evidence base … (Prison Service)

As with the government policy documents (see Chapter 7, Section 7.4) the research was seldom directly cited and on occasions the findings were exaggerated (see Section 8.3.4 Wellbeing/Quality of Life theme for an example). It is suggested that practitioners draw on research evidence to strengthen their website information, that is to say, the use of research evidence is a mechanism for demonstrating the credibility of the promotional material and providing a justification for activities and their form.

On two websites, those of the Royal Society for the Protection of Birds and the National Trust, reference was made to each organisation's own research (this took the form of literature reviews in report format):

> Research commissioned by the RSPB underlines the strong links between good physical health, good mental health and the natural environment that we strive to protect. (RSPB website)
>
> Our research has shown that an enjoyment of nature and wildlife is an alien concept to many children, so we've committed to try and inspire a generation of children to get outside and discover just how much fun can be had with the natural world. (National Trust website)

8.3.3 Benefits theme

The word 'benefits' was used frequently in the information and consequently 'Benefits' was chosen as a theme. Examples include:

> … you can enjoy healthy outdoor activity with the benefits of exercise and a place to unwind. (Stockport Council website)
>
> Walking in woods offers all sorts of physical and mental health benefits. (The Woodland Trust website)
>
> Regular contact with the natural environment has many benefits including:
> - reduction in stress;
> - increased physical activity;
> - stronger communities;
> - an increased awareness of the value of the natural environment.
>
> (Environment Agency website)

Sometimes the benefits were described in a general way such as "physical and mental health benefits" (The Woodland Trust website) and sometimes they were described in a specific way, including benefits beyond those relating to individual health, as seen above in the example from the Environment Agency website. The frequent use of the word 'benefits' mirrored the recurring appearance of the words 'benefit/s' in the policy literature (Sub-study 2), in which there were 185 relevant occurrences across the 47 policy documents. This is in contrast to the material in the literature review (Chapter 4, Section 4.5, and Section 4.9) in which the language, particularly from the middle towards the late 20th Century, was of risk, hazards and control.

8.3.4 Wellbeing/Quality of Life theme

A further theme was 'Wellbeing/Quality of Life'. These concepts, combined under one theme, appeared on the websites, often as synonyms for the word *health* and sometimes in addition to the word health, for example:

> Research has shown time and time again that it is not just physical health benefits that are associated with visiting the countryside. It also provides opportunities to relax, find peace, inspiration and contemplation, thereby improving the sense of well-being. (Tameside Council website)

In this example the use of the term "well-being" (Tameside Council website) was used to capture a breadth of benefits that contact with nature has to offer, that is to say, relaxation, peace, inspiration and contemplation. This breadth appears beyond the results of any empirical research (see Sub-study 1) and is an example of the research findings being exaggerated and overreaching the data.

8.3.5 Ecosystem Approach theme

This theme was applied to any phrase that suggested that the idea of contact with nature to enhance health had benefits for both people and wildlife, thereby indicating interdependence between humans and nature, as the example from the website of The Conservation Volunteers shows:

> A well-used green place is a classroom, a gym, a playground and a sanctuary. It is a place that is good for people as well as for wildlife. (The Conservation Volunteers website)

Although there were examples in the website information of an ecosystem approach being used to promote the activities offered, the actual word 'ecosystem' did not appear. The word 'ecosystem' appears 149 times in the White Paper *The Natural Choice: Securing the Value of Nature* (DEFRA, 2011). Thus there was translation of the concept from policy to organisational activities but not the use of the technical terminology. Given the purpose of the websites – advertising activities – this is not surprising.

8.3.6 Across Sector Partnership theme

The term 'Across Sector Partnership' was chosen as a theme because it was evident from the information on the websites that diffusion of the idea of contact with nature to enhance health was occurring via a variety of organisational partnerships. For example, Manchester City Council, the NHS, Ramblers and the Red Rose Community Forest had worked together to create a 'green corridor', that is to say, a route around Manchester comprising 14 short walks linked together by local green space. Another example was Target Wellbeing's prisons programme led by the University of Central Lancashire, partners included: The Conservation Volunteers, Forestry Commission, Groundwork, Primary Care Trusts, and Lancashire County Council. A key achievement of this programme was the development of a Green Gym® for prisoners to participate in. A further example was the partnership between Ramblers and Macmillan Cancer Support in their management of the Walking for Health initiative. (Other examples can be seen in Appendix I under 'Relevant partnerships and alliances as per website'.)

8.3.7 Practitioner Diversity theme

Similarly 'Practitioner Diversity' was chosen as a theme to cover the variety of practitioners involved in the direct delivery of activities in which contact with nature was linked to the enhancement of health. These included park rangers and park activity leaders, countryside service staff, local authority leisure workers, prison officers, early years specialists, and people from voluntary and community groups. Some of these practitioner types have not historically been associated with the delivery of health promotion activities. An example of an organisation that was receptive to the idea of health walks was a manager at a conservation/wildlife based agency, given in Box 8.2. The health walks were introduced at a similar time to the National Walking the Way to Health Initiative which was developed in 2000 by The British Heart Foundation and the Countryside Agency.

Box 8.2 The involvement of Lancashire Wildlife Trust staff (Project Officers) in the provision of health walks at Wigan Flashes Nature Reserve

The following information is provided following personal contact with the Reserve Manager, Wigan Flashes Nature Reserve.

Wigan Flashes forms part of a large complex of wetlands on a previously industrial landscape. The wetlands were formed through the extraction of coal leading to subsidence and flooding and lie one kilometre south of Wigan town centre. The reserve is owned by Wigan Council and managed by The Wildlife Trust for Lancashire, Manchester and North Merseyside.

In 1999 the Reserve Manager, keen to engage a wider audience to visit and volunteer at the Wigan Flashes Nature Reserve, decided to initiate a programme of regular health walks. The health walks began in 2001 and were funded by Wigan Leisure and Culture Trust. The health walks on the reserve were led by Lancashire Wildlife Trust staff (known as Project Officers). The Project Officers had not previously been involved in the delivery of health promotion activities on the site. Neither was there a history of delivering outdoor activities for schools on the reserve as the site does not have the required facilities.

The health walks were successful in that they were reported as having brought new people to the reserve. About 5% of the participants became volunteers on the reserve and continued to enjoy the health benefits of physical activity and socialising whilst being in close contact with nature.

8.3.8 History theme

There were examples on the websites of references to the past use of green space. For example Salford Friendly Anglers' Society, the world's oldest angling society

(Instituted April, 1817), had an image dating back to the early to mid-1800s of a man in a top hat fishing on a countryside river bank, the strapline above his head conveys the message "pleasure and health" (Salford Friendly Anglers' Society website).

A vivid example of a historical reference appeared on the Visit Manchester (the tourist board for Greater Manchester) website in promoting the attractions of Alexandra Park:

> If you are in the mood for a bit of historic immersion, go to this 60-acre park in Whalley Range. Opened in 1870, its initial purpose was to deter the working men of Manchester from the alehouses during their day off, and to encourage them instead to spend time with their families pursuing morally and physically healthier activities. Features include a lime walk, raised terrace walk and bandstand. (Visit Manchester website)

Subsequently Alexandra Park was closed whilst a £5 million restoration project was undertaken and the park was restored to its original Victorian design including new sports facilities. The park was reopened in August 2014 (McKeegan, 2014).

This is an example of continuity alongside change in that the themes and sentiments of the Victorian era, that is to say, the moral aspects and the use of green space for the community have been pulled through into a contemporary project.

8.4 Discussion

During July to October 2013 across Greater Manchester, and at a more local spatial level within each of the ten districts, there were many examples of organisations that had messages on their websites relating to the provision and/or promotion of contact with nature activities to enhance health. The range of activities provided was diverse and so too were the types of practitioners who were from multiple statutory and third sector organisations. It is evident from the results of Sub-study 3 that the idea of contact with nature to enhance health has diffused into many settings, and that the idea has been widely taken up. Thus, the local figuration of mutually oriented people delivering activities based around the idea of contact with nature to enhance health was complex and diverse, and included a range of organisations who historically had not been involved in the delivery of health related activities – in the case of the RSPB, for example – or organisations which had not been involved with contact with

nature activities – in the case of NHS Trusts, for example. The emergence of the idea of contact with nature to enhance health within the research and policy figurations has given rise to the expansion of the figuration, as well as a shift in its pattern and activity. This has not been planned by any actor or group of actors but has been the outcome of a complex set of interweaving processes at an international, national and local level. In particular, interdependencies between a number of organisations are evident.

It is difficult to establish a timeline of when the idea of contact with nature to enhance health first appeared on the websites. This is because website information changes fairly frequently. Information that has details about dates and times of events, which much of the material about the activities for the period July to October 2013 did, is only available on the websites whilst still current and is then replaced. Other material about the idea of contact with nature to enhance health may remain on the website longer, but eventually website pages are updated. A more permanent record of content relating to the idea of contact with nature to enhance health is when the idea is reflected in the mission or purpose statement of an organisation. For example the conservation body Natural England, the government's advisory organisation for the natural environment has a mission to "conserve and enhance the natural environment, for its intrinsic value, the wellbeing and enjoyment of people and the economic prosperity that it brings" (Natural England, 2014). This mission has been in place since Natural England was vested in October 2006 (Natural England, 2007) and has appeared as a 'strapline' on many of their documents. Aspects of this statement were reflected in the promotion of conservation activities on their website:

> Natural England wants to ensure that everybody has the opportunity to use, understand, engage with and be inspired by the natural environment. We also want an increasing number of people to take action to conserve it. (Natural England website)

This example shows an articulation of the organisation's primary mission which is to protect England's nature and landscapes. It is intended that this aim will be achieved, in part, through the engagement of people in conservation activities that involve contact with nature. However, as detailed in Chapter 2, Section 2.8 organisational missions and aims can change for example, that of the RSPB, and The Wildlife

Trusts. Salford Friendly Anglers' Society has also changed its purpose since 1817. Originally the society was set up for angling enthusiasts and in addition subscribers enjoyed a saving scheme, and sickness and death benefits, therefore the society was initially people centred. In more contemporary times the Society has become the "River Irwell and its tributaries largest environmental lobbying group" (Salford Friendly Anglers' Society, 2015) with one of its primary objectives being to secure resources for the environmental revival of the river. In the example of the mission change taken by both the RSPB, and The Wildlife Trusts the change was to accommodate the wellbeing of people. Conversely, in the example of the Salford Friendly Anglers' Society the change in purpose was about moving away from a totally anthropocentric position to become more environmentally focussed. These examples are reflective of a trend to consider nature and humans together.

An analysis across the websites revealed that the discourse relating to the idea, that is to say the way the idea was framed, went beyond the idea of contact with nature to enhance physical and mental health, quality of life and wellbeing. It was apparent that the idea was being used to suggest that the relationship between humans and nature was of mutual benefit and one of interdependency. Although the word 'ecosystem' did not appear on the websites an ecosystem approach was evident, however this was not as strong as in some of the policy documents notably those produced by the Department for Environment, Food and Rural Affairs (see Chapter 7, Section 7.3.4).

The idea of contact with nature to enhance health was also being used to market the different types of activity. The creative use of slogans such as "Tameside's Countryside can seriously improve your Health!" (Tameside Council website), and "There is no wi-fi in the forest but we promise you will find a better connection" (Manchester Forest School) were seen. An expression from another culture also appeared, for example, The Woodland Trust used a phrase, about walking in the woods, from Japan "… the Japanese, who believe very strongly in the restorative power of nature, call it *shinin-yoku* 'forest bathing'".

The Manchester Forest School also drew on the Scandinavian roots of the Forest School movement on its website. The Forest School Movement involves children

learning in a natural woodland environment. The number of Forest Schools in the UK has grown since 1993 when a team from Bridgwater College, Somerset, visited Denmark and on their return set up a Forest School at the college nursery (History of Forest School, 2015). Although this specific movement is relatively new in the UK, there is a history of outdoor education in the UK due to the pedagogical influences of Pestalozzi, Froebel and Steiner in the 1800s and Montessori and McMillan in the early 1990s (Cree & McCree, 2012). The development of Forest School has been strongly influenced by the philosophy of 'friluftsliv' which is a concept embedded in Norwegian culture. Friluftsliv is not intrinsically about hiking, walking, collecting, birdwatching or other outdoor activities but is about being deeply connected with nature such that one is part of the landscape and interacting with it in a spiritual way (Gelter, 2000).

Website content that includes historical references and ideas from other cultures reflects what Elias (2000) terms lengthening chains of interdependency in that the diffusion of the idea of contact with nature to enhance health in England has been influenced by customs and practices from previous centuries and other countries. The incorporation of cultural ideas globally relates to the ways in which people working in organisations were receptive to a range of ideas and used these on their websites. Diffusion of many concepts was occurring within expanding figurations, thereby increasing the variety of forms of contact with nature to enhance health.

In using the idea of contact with nature to enhance health on the websites research findings were drawn upon in a very general way and always presented persuasively and in a positive light. So, as the research evidence about the idea of contact with nature to enhance health diffused into organisational use the evidence was interpreted in particular ways and with particular purposes in mind. Two of Smith's (2013) key journey types of how ideas travel from research to policy (see Chapter 2, Section 2.5) can be applied to these findings, albeit in this case the journey is from research to use by people in organisations, namely Re-contextualised Journeys (ideas discussed in research vary substantially from the way they are applied) and Fractured Journeys (only elements of the idea appear to travel). Elias and other figurational sociologists accept this as an inevitable aspect of what happens in figurations as people use ideas

to further their own goals. This process gives rise to an increasing variety of forms of the idea, adapted for a variety of goals and outcomes.

This is similar to the process by which the idea was interpreted in particular ways when used by policy makers to formulate their policy statements. However, in the policy documents the original research articles were sometimes discernible, that is to say, for anyone familiar with the research literature some of the articles could be recognised despite the lack of a full citation (see Chapter 7, Section 7.3.1). This had the effect of making the policy documents more authoritative than they might otherwise seem. On the other hand, the information on the websites was written for a lay audience and had a more persuasive and marketing tone.

The concept of lengthening chains of interdependency (Elias, 2000) can provide an adequate explanation for the multiple forms in which the evidence was presented. Behind all the sources of information on each website are multiple figurations of interdependent people. At every interaction there is an opportunity for the evidence to be interpreted allowing the interests of the specific organisation to be addressed.

One of the policy themes identified in Sub-study 2 was 'Across Sector Action' (see Chapter 7, Section 7.3.2). In this study, Sub-study 3, there was evidence that 'Across Sector Partnership' working had developed around the idea of contact with nature to enhance health. These partnerships comprised organisations from both the health and the environment sector sometimes in partnership with the local authority. One of the early partnerships appeared in 1997 when the British Trust for Conservation Volunteers (now The Conservation Volunteers) joined forces with Dr William Bird of Sonning Common Health Centre in Berkshire to pilot the national Green Gym® initiative (Reynolds, 1999). Another early partnership was between the Countryside Agency (now Natural England) and the British Heart Foundation. In 2000 these two organisations instigated the Walking the Way to Health Initiative (now run by Ramblers and Macmillan Cancer Support and called Walking for Health): this initiative was also rolled out nationally. The results of this study show both Green Gym® and Walking for Health activities within Greater Manchester.

The results also show that there has been notable interest in the idea of contact with nature to enhance health from the conservation/wildlife based agencies. Of the 36 organisations across Greater Manchester identified as having health messages on their websites relating to the provision and/or promotion of contact with nature activities, 16 (44%) of the organisations were conservation/wildlife based agencies. Thus the idea of contact with nature to enhance health had diffused across organisations not traditionally viewed as having an involvement in public health/health promotion, for example, the Royal Society for the Protection of Birds, and The Wildlife Trusts.

Thus through many interweaving and largely unplanned processes people in organisations from different sectors were providing and/or promoting health messages on their websites, and some agencies were working collaboratively. The involvement of conservation/wildlife based agencies and the evidence of partnership working between health and conservation/wildlife based agencies are important findings. An Eliasian analysis directs thinking to the shift in power balance that conservation/wildlife agencies can achieve through alignment with agencies whose agenda and mission is more human centric (for example, NHS Health Centres, the British Heart Foundation, Macmillan Cancer Support). The core purpose of such agencies relates to the prevention and treatment of human disease and illness which is an area of enduring political interest, attracts funding from the government and other funding bodies, and is highly valued by the general public. Thus, alignment to human centric agencies is a way of increasing the status of conservation/ wildlife agencies, and furthering their own values, ideas and mission (including attracting funding, possibly from alternative sources, and maybe even making some compromises along the way).

The involvement of non-health professionals in health promotion has been advocated since the appearance of the broad based new public health system of the 1980s (discussed in Chapter 4, Section 4.6). In such a system the public health workforce is drawn from a range of different disciplines. However, the involvement of conservation/wildlife based agencies in health promotion appears to have been largely undocumented. For example in 2001 the Chief Medical Officer of Health for England (Department of Health, 2001) defined the workforce as: i) those that have a

role in health improvement and inequalities reduction, for example teachers, transport engineers, housing officers, other local government staff as well as doctors, nurses and allied health professionals; ii) professionals who spend their time in public health practice, for example health visitors, environmental health officers and health promotion specialists; and iii) public health consultants and specialists for example epidemiologists. In a chapter entitled *Mapping Public Health*, the authors Orme, Powell, Taylor, and Grey (2007) provide a list of 24 professional groups that contribute to the development of healthy communities; the types of practitioners involved in the provision of contact with nature activities are not listed. More recently in the document *Rethinking the Public Health Workforce* (Royal Society for Public Health, 2015), there are many examples of the wider public health workforce, and occupational groups that could potentially be involved in health promotion, but none relating to conservation/wildlife based agencies.

Eleven years from Henwood's (2002) report *Is there a role for environmental and countryside agencies in promoting benefits to health?* (see Chapter 4, Section 4.9) there is evidence to suggest that conservation/wildlife based agencies (Henwood refers to these as countryside agencies) have taken up the role of promoting health and are doing so in many and varied ways including the publication of grey literature. Publications to illustrate this point include a recent report by the Royal Society for the Protection of Birds and The Wildlife Trusts which joined together to produce what they have termed a 'green paper' called *A Nature and Wellbeing Act* (Robinson, 2014). In this report both organisations call for an act of parliament to "halt the decline in nature and speed its recovery, for the benefit of people and our environment" (p.5). Prior to this the Royal Society for the Protection of Birds commissioned a report into the value of the natural environment and biodiversity to mental health (Bird, 2007); this is also an example of grey literature.

Henwood (2002) called for countryside agencies to take cognisance amongst other things of the agendas of policy makers. The results of Sub-study 3 show that the involvement of conservation/wildlife based agencies in promoting the health benefits of contact with nature started to appear in the late 1990s which slightly pre-dates the emergence of the idea in policy (see Sub-study 2 which demonstrates that the idea of contact with nature to enhance health was taken up in contemporary government

policy documents from the year 2000 onwards with a peak in the number of publications per year in 2011). It is difficult, therefore, to establish any direction of diffusion of the idea between policy and use by organisations, for example whether policy has influenced the use, or whether the use by organisations has influenced policy because the timing of the appearance of both is close. It is likely that the influence was both ways. It is also entirely feasible that the diffusion of the idea in and across these figurations has been influenced, through lengthening chains of interdependency, by policy and use from a previous period.

McNeill (2006) has used quantitative bibliographic data from 1972 to 2002 to trace how three ideas, one of which was the idea of 'sustainable development', took off and spread throughout the academic, policy and popular realms. McNeill demonstrated that "the most successful ideas are not those that are most analytically rigorous but those that are the most malleable … conveying different meanings to different audiences" (p.334). Further, the direction of diffusion for the idea 'the informal sector' was from the academic realm to both the policy and popular realms over a period of 10 years. The idea of 'sustainable development' started in all three realms at the same time, whereas the idea of 'social capital' took off in the academic and popular realms and then spread to policy. One conclusion that McNeill (2006) makes is that when an idea originates from the policy or popular realms, the rate and extent of diffusion is more rapid. A finding arising out of Sub-studies 1, 2, and 3 is that the idea of contact with nature to enhance health started in figurations of researchers in the 1970s and later diffused to figurations of policy makers and into organisational use after 25-30 years. Thus the time between the appearance in academic figurations and those of policy and organisational use is a lengthy period and is a finding that accords with McNeill's (2006) conclusion. However, the idea of contact with nature to enhance health is different from the ideas McNeill (2006) studied. Unlike the ideas of the informal sector, sustainable development, and social capital the idea of contact with nature to enhance health has a long history (see Chapter 4). The appearance in the government department policy documents and in organisational use is second time around, that is to say, the idea of contact with nature to enhance health has re-emerged in policy and in organisational use. The term re-emergence is not ordinarily used in the diffusion literature because most studies do not take such a long term view of diffusion. In the sub-studies reported in

this thesis a long term approach has been taken and in the overall discussion section of this thesis an explanation will be offered for the re-emergence of the idea of contact with nature to enhance health that takes into account the wider contextual issues.

Chapter 9: Overarching discussion and conclusion

9.1 Introduction

In this chapter, the findings and associated discussion relating to Sub-study 1, 2, and 3 are drawn together to address the overarching research question *How has the idea of contact with nature to enhance health diffused through figurations of researchers, policy makers and into use through the actions of people in local organisations?* and to offer an adequate explanation (Elias, 1978, 1987b) for the diffusion of the idea. In seeking to understand and explain the diffusion process of the idea the first part of the chapter, Section 9.3, takes a long term view.

The findings have been analysed through the theoretical perspective of figurational sociology proposed by Norbert Elias. His theory of sociology has been used to frame the research problem as well as understand the diffusion of the idea of contact with nature to enhance health, which gives emphasis to the long term and unplanned character of the diffusion of the idea. In addition to Elias's (1978) theory of sociology, his work *On Nature* (2009) is also applied. This work is pertinent to the diffusion of the idea of contact with nature to enhance health, sits within his own theoretical framework, and provides a useful touchstone for discussing the emergence of the idea and the way the idea has been framed by figurations of researchers, policy makers and people in organisations. In addressing the work of Elias, Burke (2012) argues that "the most appropriate tribute to theorists is to continue to think with their ideas, testing them by seeing they fit different places, periods or situations, and extending, reducing or otherwise modifying their conclusions wherever necessary" (para. 1). Elias's work was used in the discussion section of Sub-study 1, 2, and 3 and is again applied in order to integrate the discussions into a more coherent understanding and explanation by making connections across the three sub-studies. Using Elias has brought to the fore the complexity of the diffusion process which necessitates a discussion (Section 9.3) of trends and countertrends as he argued: "A trend might remain dominant for a long time; then a counter-trend can again completely or partially gain the upper hand" (Elias, 1997, p.377). Any dates are notional, that is to say, they correspond

imprecisely to the way the idea of contact with nature to enhance health has diffused over successive centuries.

In Section 9.4 the discussion focusses on the 'research to action' diffusion process, that is to say, the appearance of the evidence base for the idea of contact with nature to enhance health since the 1970s, and its use by policy makers as well as by people working in organisations. The longer term view provided in Section 9.3 provides a broader context which is integral to this discussion. As the idea has diffused within figurations of researchers, policy makers and people in local organisations, it has been taken up for different purposes, in various ways by individuals and organisations and the scope and form (that is to say, the way in which the idea was delivered through alliances of divergent organisations) of public health action has widened; all of these aspects are discussed. Sections 9.3 and 9.4 are preceded by a return to the historical context as a prelude to discussing the complexity of some of the key processes behind the diffusion of the idea.

9.2 Understanding the diffusion of the idea developmentally and within a historical context

To avoid reducing the diffusion of the idea of contact with nature to enhance health to a static state (that is to say, to assume that it is an innovation or a 'new' idea), and to transcend more than one generation, methods of enquiry were chosen that would reveal insights into the diffusion process over many decades. Figure 9.1, a preliminary timeline, captures some of the manifold key indicators of wider social, political and economic processes, that is to say, people acting intentionally and unintentionally in figurations of interdependencies that have shaped the diffusion of the idea of contact with nature to enhance health since the 1880s. Thus, contexts during these periods were receptive to the idea, which was then interpreted to achieve particular purposes. The indicators are shown above and below the x-axis by white dashed arrows. The quantitative results from Sub-studies 1, 2, and 3 relating to the emergence of the idea via figurations of researchers, policy makers and into use through the actions of people in local organisations are shown in the bottom section of Figure 9.1 (attached to the timeline by dashed black arrows). The timeline is a heuristic device used to show the development of the idea over time, with a number

of key events in England and internationally being used as indicators of diffusion processes across many figurations.

Sub-study 1 revealed the global interest from researchers, the transdisciplinary character of the research and the breadth of methodological approaches relating to the idea of contact with nature to enhance health. Sub-study 2 showed that the idea was embedded in the policy documents of four government departments of England, and Sub-study 3 revealed that the idea was taken up by people in a range of organisations, in the Greater Manchester area, many not associated with delivering activities to promote health, such as the RSPB. This is an example of an unplanned outcome, which has been advocated for many years within public health and often mandated by government but which has not always been the way public health has been delivered at a local level.

Behind these findings are explanations that are complex, which have, in part, been discussed in Chapters 6, 7 and 8. These discussions are integrated in Chapter 9 in order to shed light on the diffusion of the idea, which, to take an Eliasian view, has been long term and largely unplanned (Elias, 1994).

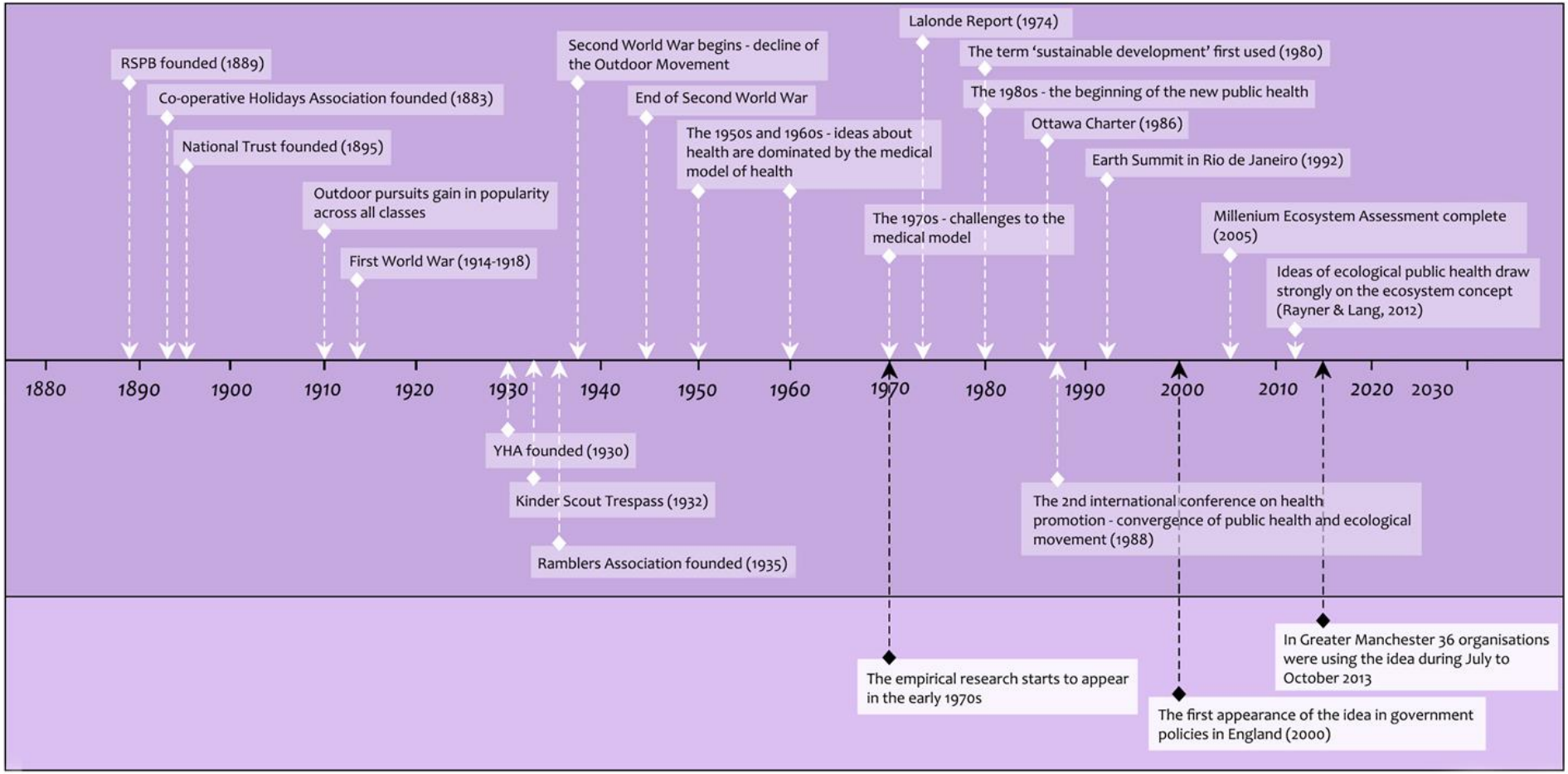


Figure 9.1 Indicators of the development of the idea of contact with nature to enhance health

9.3 Trends and countertrends

This study has shown that the idea of contact with nature to enhance health was prevalent in the 19th Century and early part of the 20th Century. The idea, promoted by a variety of groups including policy makers, was an idea used for many purposes, for example: for healing and therapeutic reasons, for pleasure and recreation, for socialising, for the collection of natural history specimens, and to meet political objectives. People did many things *in* and *with* nature and the natural environment. For those in inner cities, the natural environment was not necessarily 'on the doorstep' but people sought it out.

During this time, knowledge about contact with nature and the benefits to health seemed somewhat intuitive, that is to say, there was a 'knowing' without empirical evidence. This is not surprising as within the broader context at the time science was less developed; some ideas were based on folklore. It is only in the relatively recent past that the demand for evidence in public health has emerged, developed from the evidence based medicine movement. This 'knowing' can be explained by the concept of habitus. Elias (1994) uses the term habitus to refer to an individual's disposition and/or their propensity to act or behave in a certain way. Thus habitus, to a greater or lesser degree, becomes a characteristic of personality. Or put more succinctly by James (1998) the term "covers the tangible, environmentally and socially situated practical forms of human activity" (p.20). This 'knowing' about the health benefits of contact with nature was not present at birth but was shaped by, and was dependent upon, socialisation within figurations, cultural histories and everyday practices, and through these things became part of one's habitus. Thus the way people tended to interact with nature was grounded in the experiences and thought processes of previous generations as well as contemporary ones. This habitus meant that people, many of whom were city dwellers and unlikely to have everyday contact with nature, had a *connectivity* with nature through embodied social learning.

An aspect of habitus was the notion of 'moral health, therapy and development', that is to say, contact with nature in the 19th and early part of the 20th Century had a moral dimension as the idea was used politically as a way to influence, develop and educate the working classes, to encourage them to keep physically healthy, be wholesome and good, family minded, to keep out of trouble, abstain from alcohol and, it is

implied, sin. It is likely, however, that all manner of things happened *with* and *in* nature and the natural environment that were not conducive to righteous living, more obvious examples being poaching, and illegal gaming such as cockfighting, bull baiting and badger baiting, all of which were banned in 1835, but continued afterwards (Reid, 1990). The motives of the ruling classes, who had a part in facilitating contact with nature, were not wholly altruistic as the idea has been linked to industrial productivity, keeping the nation fit for war and avoiding the spread of infectious disease: all interdependencies of power and actions for a variety of purposes. Thus as people living in inner cities were geographically distanced from the natural environment, access to it was sometimes facilitated or negotiated through power interdependencies.

During the mid-20th Century the idea seems to be obscured from view, that is to say, the idea of contact with nature to enhance health was not so much a part of the habitus of people, and therefore collectively was not so much a part of the fabric of society. This is what Elias (1997) would describe as a countertrend. Retrospectively, from a position of 65 years on, an adequate explanation of the contributing factors would be migration of figurations of people to urban areas, a rise in the medical paradigm, and, interdependently, an expanding universal health care system, an improvement in the standard of living in the post-war period for the people of England, and the rise of technology: all interweaving processes. Improvements in some of the wider determinants of health such as housing, education, and employment, were due in part to the enactment of the strategies in the Beveridge Report (1942).

However, in other areas of public life the quest to 'modernise' and increase technology was a trend that pervaded policy and nature tended to be seen, particularly by politicians at the time, as "backward, nostalgic, reactionary and irrelevant" (MacNaghten & Urry, 1998, p.35). This is not to say that the idea of contact with nature to enhance health was obscured over a short time frame (or altogether), rather, new ways of living (new habitus) developed over several decades. Elias (1996) writes of a lag between changing social conditions and habitus such that social changes take time to permeate; it is suggested that this was happening during the post war period. The countertrend of the reduced visibility of the idea of contact

with nature to enhance health was a consequence of the interweaving of several complex processes that no-one appears to have planned or intended (Elias, 1994), that is to say, the idea was not especially 'factored in', neither however was it directly 'designed out'.

In the 1970s much of the discourse about health in relation to the environment centred on controlling the environment to reduce hazards and threats to health, with a corresponding measurement of the risks posed. In much the same way, at this time, the natural forces of nature were the subject of control by people through, for example, the indiscriminate use of insecticides and wildlife destruction for economic gain, along the lines discussed by Carson (1962) in her classic text *Silent Spring*. The dominant view was anthropocentric in which many humans considered themselves to be the most significant entity of the universe and placed themselves above other species.

Juxtaposed with these dominant ideas of relative power and control, also in the 1970s, academics notably Kaplan and Ulrich but also many others in figurations of researchers (see Sub-study 1) commenced scientific studies relating to the idea of contact with nature to enhance health. For example in the preface of Kaplan and Kaplan's (1989, p.ix) book, which is the equal second most cited reference (see Sub-study 1), the researchers' interest in the restorative powers of the natural environment started with the question: "Is the effect of nature as powerful as it intuitively seems to be?" An intuitive 'knowing' that contact with nature has benefits for health has been discussed in Chapter 4, and noted as a trend in relation to the concept of habitus earlier in this section. When figurations of researchers began to study the idea there was a dearth of empirical evidence; this is attractive to figurations of researchers in that such areas of research are uncharted and therefore afford the researchers opportunities to cover new ground, secure economic resources and raise their "status and power chances" (Elias, 2009, p.137). The figurations of researchers in the 1970s were from more than one continent, and from different disciplines thus research into the idea was conducted in a plurality of ways.

Elias (1978) writes about the diffusion process in his theory of sociology. His comments about the diffusion of ideas are, notably, about the diffusion process of

anthropomorphism in regard to nature. Anthropomorphism is the ascribing of human characteristics and purposes to nonhuman things: this was prevalent prior to the Age of Enlightenment in the 18th Century. Elias comments upon the many generations it took for scientists to develop ideas of "the non-intentional, aimless and unplanned lawfulness of nature" (p.18) rather than ascribing human characteristics to nature. Elias (1984) refers to nature as a "cold, wild, deserted chaos" (no page number) later qualifying this statement by saying "nature is something neither good nor bad, it's blind" (no page number). Elias (1984) appears to be saying that nature is not characterised by a record of goods or bads: nature 'is'. In much the same way Elias (2006) argues that a person, a number or an idea 'is'. Therefore Elias is clear that nature does not have any intent. In writing of the move away from anthropomorphic ideas about nature Elias (1978) comments on the diffusion process thus:

> Only very slowly and with great difficulty did these ideas emerge out of anthropomorphic and egocentric ideas and ways of thinking. Then finally the new ideas diffused outwards from a small élite, until they informed the everyday thought and speech of whole social groups. (p.18)

In the quotation above Elias is describing how a new idea – a non-anthropomorphic view of nature – diffuses, that is to say, "very slowly and with great difficulty" (p.18). Similarly, the research literature about the idea of contact with nature to enhance health has diffused slowly (Sub-study 1). The Kaplans were two of the earliest scientists, amongst others, to start researching the idea of contact with nature to enhance health in the 1970s. Different aspects of the idea were then slowly taken up and researched by many more academics over decades. Gradually, and because the social context was favourable, ideas about the health benefits of contact with nature emerged out of anthropocentric ideas and ways of thinking, that is to say, ideas of dominance, control, threats and hazards. Four decades later the idea of contact with nature to enhance health has, based on scientific inquiry and folklore, been used by policy makers as well as by people promoting and/or providing organisational activities (Sub-study 2 and Sub-study 3). Thus, the idea that contact with nature has health *benefits* has diffused and (to borrow a phrase from Elias's sociological theory), "informed the everyday thought and speech of whole social groups" (Elias, 1978, p.18). These social groups are, but not limited to, interdependent figurations of researchers, policy makers and users in organisations.

A very general direction of diffusion, since the Age of Enlightenment, has been: nature has human characteristics, that is to say, an anthropomorphic view was dominant (trend) → nature has no intent (countertrend) → anthropocentric thinking/humans are superior to other species (trend) → humans and nature are part of an ecosystem and contact with nature provides us with health benefits (countertrend). Although displayed as a linear sequence and therefore an oversimplification, in actuality, the trends and countertrends overlap across different spatial and temporal periods; there are also many 'sub' trends and countertrends, and continuity alongside change.

In his theory of sociology Elias (1978) does not separate the individual from the rest of society or from nature and natural objects, however, Elias (1978) argues that: "As human society develops, people experience themselves increasingly as separate beings, distinct both from other people and natural objects" (p.122). Elias (1978) claims this to be a socially instilled phenomenon. In Chapter 3 Elias's ideas about the Ancient Greeks were discussed, particularly the way they did not see nature as a separate entity. The Ancient Greeks "lived with nature in an intimate way" (Elias, 2006, p.9) such that nature and/or seeing in nature was an extension of the self. However latterly, and due in part to the influences of the environmental movement and many other interdependent figurations, thoughts and actions related to ecosystem concepts have diffused (evidenced in Sub-study 2 and Sub-study 3). This is not a return to the Ancient Greek way of seeing nature but it is more *Homines aperti* than thinking of nature as a separate entity which is 'out there' and which, to achieve progress, must be tamed, controlled and dominated. Within this concept of *Homines aperti* individuals are open interdependent processes with other individuals and nature.

In his essay *On Nature* (Elias, 2009) written in 1986 (see Chapter 3, Section 3.4), Elias notes that there are many modern examples of ideas about nature that are fantasy and myth and conversely many that are reality congruent. He notes with criticism that parts of humanity make a "god of nature" (p.59) and contrasts this with the detached and "fact-related view of nature that is the result of the research of many generations of scientists" (p.60); giving weight to the idea that scientific knowledge does not replace other ways of knowing over short time periods. The

work of the researchers referred to in Sub-study 1 has added to the body of knowledge about how contact with nature can enhance health. Ideas about the health benefits of contact with nature are more reality congruent and detached, at the earlier part of the 21st Century, than prior to the empirical evidence appearing in the 1970s. What subsequently happened to the knowledge as it was taken up by policy makers and for use in organisations was the subject of Sub-study 2 and Sub-study 3. This is part of the 'research evidence to action' diffusion process which is further discussed in the next section.

9.4 The research to action diffusion process

Having explored the diffusion of the idea of contact with nature to enhance health within a wider context especially from a long term perspective, a closer and more detailed look at the research evidence to action diffusion process will be presented. As with the long term view the discussion will also be drawn from the findings of Sub-study 1, 2, and 3. An adequate explanation will be offered as to how the idea of contact with nature to enhance health has been taken up by organisations outside of the traditional health service for this is a major finding in this thesis.

The research into the idea of contact with nature to enhance health has been ongoing for over four decades since the early 1970s. Research about the idea of contact with nature to enhance health, although disciplinary initially (the first researchers were psychologists), can more adequately be described as transdisciplinary. This is defined as "research efforts conducted by investigators from different disciplines working jointly to create new conceptual, theoretical, methodological, and translational innovations that integrate and move beyond discipline-specific approaches to address a common problem" (Harvard School of Public Health, 2015). In Sub-study 1 evidence of academic attention from a wide range of disciplines and transdisciplinary approaches to the research were revealed. The figuration of researchers expanded over time, space and discipline.

This breadth of academic interest aids the diffusion process in that the conditions are favourable for the research evidence to be communicated through a greater number of figurations of interdependent people. The substantial interest from people working in many disciplines and the transdisciplinary character of the research did

not, however, initially lead to figurations of policy makers using the evidence in contemporary policy documents. The time lag was nearly thirty years from the first appearance of the research evidence to the appearance in policy.

One explanation for the delayed utilisation is to do with context. The earliest research identified was in North America and at a time before the internet was available: although there were international conferences, seminars, and journal publications, research was not the global commodity that it is today. The use of the internet and search engines has speeded up the publication process and can deliver the latest research to researchers' computers if they make use of various forms of alerting processes. There has also been a proliferation of journals increasing the number of opportunities for publication. Further, the first appearance of the research evidence in the 1970s pre-dates the emergence of the evidence based policy and practice movements of the 1990s. Policy makers at that time tended not to use research; policy making was more ideologically driven as it was based on values and beliefs. Although policy makers have the power to define an issue as in need of attention, the early research pre-dates the developing obesity epidemic and the increase in occurrence of many of the 'lifestyle' diseases and is therefore, looking back, a solution to a problem that did not yet exist in the minds of people. The style and content of the policies of the former Department of Health and Social Security (1968-1988), for example in the report *Prevention and Health: Everybody's Business* (DHSS, 1976), was fundamentally one of individual responsibility for health (Webster, 1996) with some attention given to health inequalities (MacDougall, 2007). Thus public health policy was disease focussed and not about the wider determinants of health: the early research pre-dates the new public health of the 1980s. Further, only since the late 1990s has inter-sectoral collaboration been widely advocated (Earwicker, 2010). Inter-sectoral collaboration has the goal of increasing the networks of social relations developing processes that enable ideas to diffuse further. There was evidence of inter-sectoral collaboration in the contemporary policy documents analysed in Sub-study 2.

The results of Sub-study 1 showed that there were 806 different journal titles, cited twice or more, where research articles about the idea were published. The research interest in the idea and the evidence generated was by academics from many

different disciplines; thus the idea was not 'stuck' (von Hipel, 1994) to one discipline, but rather communicated by figurations in one discipline to figurations in another through published work. Another possible reason the research evidence was not 'sticky' is because the subject of investigation was both health and nature; these are two very broad areas that are of interest to many academics working in a variety of fields. There are some important interdependencies between researchers and those in figurations who fund research. Academics are constrained by research grant parameters, and by the pressure to publish (Flaherty, 2015); these are factors that can stifle innovation (Foster, 2015), but nevertheless can, together with the pressure to collaborate, increase the diffusion of ideas across academic disciplines.

Of the 806 different journal titles cited twice or more, 247 (30%) were classified as 'Public Health and Medicine'; 49% of the citations were from this field. Thus, the research published in the 'Public Health and Medicine' journals appears to have been valued by other academics researching and writing about the idea. Elias and Whitley (2009) argue that "different scientific disciplines vary in power resources, status and prestige" (p.103); the medical field is an example of a discipline that is powerful and has high status and prestige (Dopson & Fitzgerald, 2005). Due to the perceived power associated with the medical profession, some figurations of researchers were possibly citing public health and medical articles in order to exert greater influence.
The volume of activity from academics in the 'Public Health and Medicine' field, and the interest from other academics in their output, is also highlighted because when the use of the idea by people in organisations was examined there was less activity from the traditional health service sector than from other sectors. Given that NHS Trusts did not appear significantly in Sub-study 3 as providers and/or promoters of activities that use the idea, it is likely that the involvement of NHS Trusts related to commissioning other agencies to deliver on their behalves, in accordance with the trend towards NHS commissioning of public health and health promotion services and activities. The websites of NHS Trusts tended to be patient focussed and did not typically reflect health promotion approaches related to the wider determinants of health.

Within this thesis little mention has been made of the quality of the evidence base relating to the idea of contact with nature to enhance health and this has been

deliberate. Reference to the evidence base was made in Sub-study 1 (Section 6.2) regarding the selection of the syntax for the bibliometric search, and later in relation to Ulrich's (1984) article *View Through a Window May Influence Recovery From Surgery* which has been challenged on the grounds of reliability due to poor data collection techniques (Health Council of Netherlands, 2004). For many years public health was dominated by an approach, originating in medicine, which places certain types of evidence above others. Original assumptions were that high quality evidence could and should be incorporated into public health policy, and that if high quality evidence existed it would readily be used in practice. This linear approach alone has been discredited and deemed naïve because research evidence diffuses into policy and practice through complex social processes involving interdependent figurations: "Social cultural accounts of knowledge flows offer a richer perspective than a focus on the nature of the knowledge itself" (Dopson & Fitzgerald, 2005, p.188). Other authors also comment on the inappropriate reliance on linear models of research into policy and practice as what counts as evidence tends to vary across disciplinary and professional fields (Thurston, 2014). Further, Lang and Rayner (2015) suggest that public health professionals "hide behind what has been a conditioned intellectual reflex of calling for 'more research, more evidence'" thereby often delaying action by creating a smokescreen. An observation whilst undertaking the research for Sub-studies 1, 2, and 3 is that the evidence base of the idea of contact with nature to enhance health was seldom contested (except for the example above) by figurations of academics, policy makers or by people in organisations because they could see a purpose in using it to further their own interests. It was apparent, from extensive reading about the idea, that the idea itself tends not to polarise opinion but many constraints arise in circumstances where nature and the natural environment are pitted against economic development or, as discussed below with reference to the White Paper *The Natural Choice: Securing the Value of Nature* (DEFRA, 2011), valued and used for economic development.

In Sub-study 1 it was revealed that there were multiple evidences (plural) relating to the idea of contact with nature to enhance health, for the idea had been researched in different ways and by different disciplines using a variety of methodologies. Potentially, such variety widens the appeal to policy makers and people in organisations, particularly those who have not been socialised into hierarchical

notions of the quality of evidence, as clinical health professionals tend to have been. The evidence flow from research to policy can be summarised as the diffusion of an *evidence informed* idea that has slowly but widely diffused through broad appeal and expanding figurations of interdependent people.

One catalyst for the diffusion of the research evidence into the policy documents was, as discussed in Section 9.3, the broader context of the developing environmental movement. The finding that the idea appears in policy is an indicator that the idea has diffused. This view accords with Giddens (2006) who argues that "responsibility for the environment, which was previously the province of ecological activists, has now been accepted as part of the conventional political framework" (p.121). Within the policy documents there were many adjectives to describe the health and wellbeing related benefits of contact with nature such as 'inspiring', 'enriching', 'enhancing', 'sustaining', 'restoring'. The crossover of the words 'health' and 'wellbeing' was also evident. The idea of nature as a destructive or damaging force which presents hazards and threats, as presented in the Lalonde Report (1974) for example (see Section 4.5), was not part of the discourse.

The appearance of the idea of contact with nature to enhance health was evident not only in the policy documents of the Department for Environment, Food and Rural Affairs, which more than any other government department reflected an ecosystems approach in which the natural world was valued for its own sake alongside the services it provides to humans, but also in three other departments. This might be indicative of a move towards 'health in all areas of policy', that is to say, a response that acknowledges that health problems have multiple origins and require a vast array of healthy public policy (Milio, 1987). However, given the evidence that so-called 'joined up government' remains a challenge, it is more likely that each government department was pursuing its own interests and goals, without regard to notions of working in a co-ordinated manner.

Policies produced by the Department for Culture, Media and Sport revealed minimal appearance of the idea despite the theoretical relevance of health and nature to 'culture', and health and nature to 'sport'. This reveals that some policy makers and politicians, can and do, continue to operate in what is commonly referred to as 'silos'

and reflects their relative power to include some priorities over others. Nevertheless, the diffusion of the idea in the documents of the other departments showed references in one department's documents to those in another. There was an expressed intention of inter-sectoral collaboration, and documented commitments to work strategically together. Conceivably, though, this was policy content that policy makers were constrained to produce by the figurations they were in, and such collaboration is predicated on people from different sectors seeing ways of negotiating advantages, that is to say shifting power balances, for their organisation, personal gain, and/or pursuit of ideals and values.

The historical review of the idea of contact with nature to enhance health revealed that, to a greater or lesser degree, the idea was commodified in the early 20th Century, for example by the Youth Hostel Association and Ramblers' Association. With the re-emergence of the idea it is argued that nature has been subjected to further commodification by organisations pursuing their own interests. Within the policy literature the idea was used in an instrumental way by the Department of Health. The appearance of the idea in this department's documents dates from 2004, which was later than for that of the other departments, this suggests that perhaps policy makers at the Department of Health had prioritised the pursuit of other agendas. This ties with the theme of 'Instrumentality' for there was a take up of the idea but largely as an adjunct to the department's other activities and priorities: prevention being frequently pushed to the periphery of networks by powerful people focusing on 'downstream' approaches, such as treatment and secondary care.

The idea was used for community development by the Department for Communities and Local Government, and for curricula purposes by the Department for Education. The idea was also commodified by organisations on their websites in that it was used to market a range of activities to the general public and sometimes 'packaged' in, for example, the form of a health walk, a wildlife identification walk or a Green Gym®. Macnaghten and Urry (1998) have documented the commodification of the countryside in terms of: the retail sector (countryside equipment and clothing); specialised sports such as jet skiing and mountain biking; and the leisure and tourism industry. Thus the idea has been commodified and commercialised to suit organisational purposes in different ways.

Nowhere in the policy documents was the idea more commodified than in White Paper *The Natural Choice: Securing the Value of Nature* DEFRA (2011). This document had more references to the idea of contact with nature to enhance health than any other document. Out of the 47 policy documents, 38 of the documents were published before the White Paper was published in June 2011. Much of the content about the idea of contact with nature to enhance health was synthesised in the White Paper from the other policy documents. The document was politically contentious, however, in that the main thrust of the paper was to propose a 'Natural Capital' agenda, that is to say, to put an economic value on nature. This approach divided opinion, and has been criticised heavily, for example, by Monbiot (2014) for attempting to put a price on nature thereby adopting the values of those who wreck the environment. Monbiot (2014) argues that the Natural Capital agenda cannot work because the power balance remains unchanged "… what we are doing here is reinforcing power, is strengthening the power of the people with the money, the power of the economic system as a whole against the power of nature" (no page number).

Apart from DEFRA's White Paper, the way the evidence was presented in the documents was in a relatively non-contentious way. For example, there was minimal content, if any, about the power struggles that exist between environmentalists on the one hand and economic developers on the other: struggles that appear frequently in the popular realm of the media. Such tensions were looked for in the discourse of the documents but were either not there or what little appeared was positively framed. The content was largely presented in a benign way devoid of any power implications and made to appear "like common sense" (Bøås & McNeill, 2004).

In a similar way to the appearance of the idea in the policy documents, the information on the websites of organisations that had health messages relating to the provision and/or promotion of contact with nature activities to enhance health (Sub-study 3) was also framed positively. The use of the word 'wild' appeared but was used in a favourable way to promote summer activities for children as fun and an opportunity for discovery. The discourse indicated that in return for meeting the

responsibilities of protecting and improving nature there were many benefits to be gained.

Examples of inter-sectoral collaboration and inter-sector working were also evident from Sub-study 3. Many of the organisations engaged in the provision and/or promotion of contact with nature activities did so in partnership with other organisations. Such partnerships brought together people from different sectors. For example Manchester City Council, the National Health Service, Ramblers, and the Red Rose Community Forest had worked together to create a 'green corridor'. Thus organisations were enabled and constrained to work together for various wider reasons relating to organisational goals, values, and purposes.

The findings from Sub-study 3 revealed that a wide variety of practitioners from various organisations, listed in Table 8.1 of Chapter 8, were using the idea of contact with nature to enhance health. This variety is outside of what is typically documented as the public health workforce (DH, 2001; Orme, Powell, Taylor, & Grey, 2007; Royal Society for Public Health, 2015), but the variety of organisations that have taken up the idea accords *in part* with the vision for health promotion as laid out in the Ottawa Charter (WHO, 1986), that is to say, health promotion action in all sectors and at all levels within everyday settings, however this is an outcome that no one person set out to achieve. Further, the goal itself is somewhat unrealistic given that many sectors have other agendas to pursue and will promote health if it is in their interests to do so. In the organisational user figurations the adoption of the idea of contact with nature to enhance health by people from conservation and wildlife agencies accounted for 16 (44%) of the organisations. Thus, people from conservation/wildlife based agencies, identified with the idea, and used the idea to further their own interests by securing attendance at activities, recruiting to their agencies, increasing membership, increasing volunteering, and drawing down funding. Local Authorities too were active in promoting and/or providing activities that use the idea of contact with nature to enhance health. Within Greater Manchester the Local Authorities engaged in a varied range of activities from across the activity themes (Chapter 8, Table 8.1) and met their responsibilities in this regard to a cross-section of society.

Explanations will be offered as to why the research evidence was particularly used by some occupational groups. In their work on evidenced based health care in context Dopson and Fitzgerald (2005) state that knowledge is "the acceptance and application of evidence within a given context" (p.134) and further "Before it leads to behavioural change, the newer knowledge has to be actively related to what individuals already know, including what they know through their experience" (p.156). The people from conservation/wildlife based agencies were engaged in occupational areas where contact with nature was central to their work. Thus the preservation of nature and the natural environment was of central importance to them. Further, many of these people would have mastery of their subject knowledge and of working in and with nature and the natural environment; they have, in other words, 'nature literacy' which increases confidence in promoting contact with nature for health benefits. It is likely that contact with nature is also a part of their everyday life including their recreational preferences, that is to say, they have connectivity with nature; it is part of their habitus (Elias, 1994). The conservation/wildlife practitioners are likely to take the responsibility for nature seriously and part of this responsibility includes sharing their knowledge with new people including children. Many of the activities were geared towards children especially those of primary school age or younger. The 'Curricula' theme that was prevalent in the policy documents of the Department for Education in Sub-study 2 was reflected in the promotional material for the school holiday activities, provided by the local authorities and conservation/wildlife based agencies.

Habitus, however, only explains in part why conservation/wildlife based agencies had taken up the idea of contact with nature to enhance health. Some of the organisations, for example the RSPB and The Wildlife Trusts, had expanded their missions and aims to include the wellbeing of people. In 2009 the Ramblers' Association (now Ramblers) was rebranded and repositioned to attract people from all backgrounds, abilities and a younger age group. However, this large structural reorganisation together with the economic downturn left the organisation in financial difficulties (Ramblers, 2010). Subsequently, Ramblers secured government funding for the Walking for Health initiative, run in collaboration with the Macmillan Cancer Support charity, which helped to stabilise the finances of the organisation. Similarly, the securing of funds for some of the conservation/wildlife based agencies has

probably been an imperative and by embracing people's health as well as nature's health these organisations could further their own interests, protect and promote their own values, and survive in a climate of reduced public spending. This observation warrants further research and is elaborated in Section 9.6.

9.5 Conclusions and wider implications

The overarching aim of this case study was to explore how an evidence informed idea diffuses. More specifically, the investigation of how and why the idea of contact with nature to enhance health emerged in research literature, diffused into and through policy in England, and was taken up by people and used in activities offered by a variety of organisations within Greater Manchester.

It was established through bibliometric method that the empirical evidence about the idea of contact with nature to enhance health first appeared in the early 1970s. Following a lengthy time lag of 25-30 years the empirical evidence was taken up by interdependent figurations of policy makers and people in organisations for use in the promotion and/or provision of activities relating to the idea. A diffusion pattern was not discernible, that is to say, the diffusion of the idea between figurations of policy makers and use by figurations of people in organisations, following the appearance of the empirical evidence, could not be ascertained because the timing of the take up in these different figurations was close and the influence was both ways. It is likely that users in provider organisations selectively used ideas and evidence to further their own ends, particularly with regard to attracting funding as well as protecting their values and identity. A key conclusion is that the diffusion of the idea of contact with nature to enhance health has been a long term, largely unplanned, and non-linear process.

A further influence on the diffusion of the idea was the environmental movement notably the attention, thinking, and research since the 1980s surrounding the ecosystem concept, that is to say, viewing humans as *interdependent with* nature, as well as vice versa. The framing of the idea of contact with nature to enhance health in the policy documents and on the websites of organisations drew indirectly on the research, was highly positive and was framed in such a way that it appeared like common sense. The Department for Environment, Food and Rural Affairs had more

references to the idea of contact with nature to enhance health than other government departments and, through take up of the idea by figurations of people in conservation/wildlife based agencies, the scope of public health action had widened. Some inter-sectoral collaboration about the idea was also evident in policy and organisational use, thus a few of the ideals expressed in the Ottawa Charter (1986) have been enacted, probably not intentionally however, including the idea too that health is created in the context of everyday life.

The long term character of the diffusion of the idea is without beginning or end, and is characterised by trends and countertrends. The idea has been communicated through, or its enactment is a manifestation of, what Elias (1994) calls lengthening chains of interdependency, both temporally and spatially. For example, in Sub-study 1 many of the authors of the scientific publications drew attention, through the use of citations, to the idea of contact with nature to enhance health from a previous period, that is to say, prior to the appearance of any empirical evidence. The appearance of the empirical evidence was influenced, therefore, through lengthening chains of interdependency through time (Elias, 2000). In Sub-study 1 the lengthening chains of interdependency were also seen extending spatially as the diffusion of the idea in the figurations of researchers spanned several continents, and involved a range of academics from different disciplines who have published in many different journals: a process itself influenced by the changing character of higher education and the emphasis on research and the prestige it offers to academics and their institutions.

A summary of the quantitative data from Sub-study 1 and Sub-study 2 shows that the number of research publications per annum peaked in 2005 and the highest number of phrases about the idea in policy peaked in 2011. Therefore early indications were that the second wave of diffusion of the idea (the 're-emergence') appeared to be tailing off. However, in Eliasian terms in which observation through a longer lens is required, it is too soon to say if the current trend is waning or being displaced.

It was revealed in Sub-study 3 that for a range of statutory sector and third sector ('not for profit') organisations there was a readiness to engage with health issues. These organisations appear to have taken up the idea, and through contact with the communities served, via websites, provided and/or promoted the idea through a

range of activities. The idea was particularly embraced and promoted by people from the conservation/wildlife based agencies. A conclusion from the thesis is that such people working in community based organisations take up interventions when it suits their agenda and purposes, their values are not sacrificed, and funding follows the take up of the idea. Therefore, if people in organisations see an advantage they will engage with a health promotion idea.

In Sub-study 3 the idea was used to market Manchester through cultural history but there was limited diffusion in the policy documents of the Department for Culture, Media and Sport. Perhaps this is a case of what is a priority and desirable for one figuration of people (users in organisations) is not necessarily so for another (the policy makers). There is scope for the further linking of nature/health and culture, and nature/health and sport, commencing with an exploration, through further research, as to why diffusion did not happen to a greater extent amongst figurations of policy makers in this sector.

The diffusion of the idea in the interdependent figurations of researchers, policy makers, and use by figurations of people in organisations was widespread and the nature and/or strength of the evidence did not seem critical to the diffusion process. Further, evidence within the diffusion process was modified for people's purposes. After one year of public health under local government responsibility, Kelly (2014), Director of the Centre for Public Health at NICE, has commented that a broad approach to evidence is taken in local government and such an approach sits very well in public health. It seems that a broad approach to evidence has happened, without any directive from local government, but is accounted for by the interweaving within the research to action process of many figurations of interdependent individuals.

This research has identified the diffusion of a health promotion idea into a sector not previously identified with public health. The transdisciplinary research has been a factor in the diffusion process because policy makers and people in organisations have been receptive to the research as a way of pursuing their own values and interests, which the commissioning context has also enabled. The diffusion of the idea of contact with nature to enhance health did not take place as a result of a

national campaign, or through sophisticated social marketing techniques, but has diffused in part through the reiteration of the idea in contemporary policy documents across government departments over a 12 year period. This was particularly prior to the arrival of DEFRA's (2011) White Paper in which the idea was subsequently concentrated. A conclusion from Sub-study 2 and Sub-study 3 was that if policy makers and people in organisations are to adopt research findings then they need to see tangible benefits for their own agendas.

Advocacy for a wider public health workforce to address the wider determinants of health has been around since the mid-1980s (WHO, 1986). In the case study within this thesis the complexities behind the diffusion process of a health promotion idea that has successfully diffused have been explored. The wider implications for academics, policy makers and organisational use are that health promotion ideas, even ideas with a long history and a substantial evidence base may take time to diffuse because whether or not they are used is interdependent with the socio-cultural context of the time. Reiterations of the idea in policy documents and across multiple sectors were evident. Interest in the idea may come from unexpected sectors particularly people who have connectivity with the subject knowledge, who have an opportunity to share this, and thereby further their own interests.

9.6 Strengths and limitations

The strength of this case study of the diffusion of the idea of contact with nature to enhance health is the long term view taken of the diffusion process and the corresponding methodological approach, that is to say, the sustained application of Elias's sociological theory, to the research question.

Broad areas of investigation, that is to say, interdependent figurations of researchers, policy makers and users in organisations were chosen for the study. These research boundaries were deliberately located outside of any one organisation, which avoided taking a traditional view of the diffusion of a health promotion idea which is usually through a National Health Service lens.

A further strength has been the breadth of the investigation by focussing on the diffusion of a health promotion idea through interdependent figurations across

different sectors. Also, as Greater Manchester is illustrative of other large conurbations in England, the volume and type of organisations that provide and/or promote health through contact with nature activities is likely to be similar in other parts of the United Kingdom. Therefore the results of Sub-study 3 are possibly transferable to other metropolitan areas that share similar demographics.

The claim to "the creation and interpretation of new knowledge" (Quality Assurance Agency for Higher Education, 2008, p.23) as an outcome of this thesis relates to what is known about diffusion in the health promotion tradition. This case study offers up methodological approaches for how diffusion, particularly of complex health promotion ideas, may unfold. The study is firmly grounded in figurational sociology yet cognisance is taken of traditional diffusion work where relevant, thereby resolving figurational methodology with more traditional diffusion work. The study is unique in diffusion studies, not only methodologically, but also theoretically in offering a more nuanced and adequate explanation for how ideas emerge and re-emerge depending on the broader political interests and values of people. The idea of contact with nature to enhance health has diffused because of the wider context of the environmental movement. This was possible to determine through an investigation of the research question within a historical context. The term 're-emerged' is applied as an adequate descriptor to describe how an idea has surfaced again in a different epoch as part of the long term diffusion process of an idea.

Sub-studies 1, 2, and 3 all had limitations: these were presented in the results or discussion section of each study. A more general limitation to emerge is the need, ideally, for a fourth study to investigate further the diffusion process *within* a range of conservation/wildlife based agencies. The aim would be to understand, comprehensively, the motivations and perspectives of practitioners involved in the provision and/or promotion of contact with nature to enhance health activities, as Dopson & Fitzgerald (2005) argue "Innovation behaviour in an organization can rarely be understood by focusing on the scientific knowledge or evidence as the sole influencing factor … there are always multiple factors at work" (p.157). In Sub-study 3 an insight into how the organisations were operating internally was only glimpsed at by looking at the content on their websites; this view was very much

from the outside looking in. The aim of Sub-study 4 would be to 'get inside' the organisations, for the view of practitioners, and to explore such questions as:

- What from a strategic perspective are the reasons behind the involvement of the conservation/wildlife based agencies, and what further things does this say about the diffusion process?
- What is the experience of working in alliances with organisations that have differing values, philosophies and priorities?
- What is the evidence that practitioners have directly responded to policy drivers?
- How much is their practice related to the imitation of other organisations?
- What is the motivation of conservation/wildlife practitioners who use the idea of contact with nature to enhance health; do they perceive themselves to be part of the wider public workforce?
- Is it the case that by adopting the health promotion aspect of the idea, practitioners from conservation/wildlife based agencies are able to further their own agenda by reaching more people?
- Does the involvement of a human dimension to the work of practitioners in conservation/wildlife based agencies strengthen their funding potential?

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Appendix A: Ethical approval

University of Chester

Faculty of Life Sciences
Research Ethics Committee

frec@chester.ac.uk

Kim Greening
Department of Community Health and Wellbeing
Faculty of Health and Social Care
Warrington Campus

2nd October 2013

Dear Kim,

Study title:	**The Diffusion of the Idea of Contact with Nature to Enhance Health: Organisational Perspectives on Adoption.**
FREC reference:	**852/13/KG/FLS**
Version number:	**1**

Thank you for sending your application to the Faculty of Applied Sciences Research Ethics Committee for review.

I am pleased to confirm ethical approval for the above research, provided that you comply with the conditions set out in the attached document, and adhere to the processes described in your application form and supporting documentation and subject to the following recommendations:-

- Clarify and identify how many people will be involved in the study.
- Note the change of name to the Faculty of Life Sciences as from 1st October 2013.

The final list of documents reviewed and approved by the Committee is as follows:

Document	Version	Date
Application Form	1	September 2013
Appendix 1 – List of References	1	September 2013
Appendix 2 – C.V. for Lead Researcher	1	September 2013
Appendix 3 – Letter of Invitation to Participants	1	September 2013
Appendix 4 – Participant Information Sheet	1	September 2013
Appendix 5 – Participant Consent Form	1	September 2013
Appendix 6 – Interview Schedule	1	September 2013
Appendix 7 – Risk Assessment Form	1	September 2013

Please note that this approval is given in accordance with the requirements of English law only. For research taking place wholly or partly within other jurisdictions (including Wales, Scotland and Northern Ireland), you should seek further advice from the Committee Chair / Secretary or the Research and Knowledge Transfer Office and may need additional approval from the appropriate agencies in the country (or countries) in which the research will take place.

With the Committee's best wishes for the success of this project.

Yours sincerely,

Dr. Stephen Fallows
Chair, Faculty Research Ethics Committee

Enclosures: Standard conditions of approval.

Cc. Supervisor/FREC Representative

Appendix B: The Web of Science syntax used for the bibliometric search in Sub-study 1

Box B.1 Syntax taken from Croucher, Myers and Bretherton (2007, p. 43)

Health Syntax
((benefit* or chang* or effect* or enhanc* or gain* or improv* or increas* or maintain* or maximis* or maximiz* or promot* or rais* or sustain* or influence* or impact* or affect*) SAME (wellbeing or wellness)) OR "quality of life" OR ("level* of wellbeing" or "level* of wellness") OR ("self-rated wellbeing" or "selfrated wellbeing" or "self-assess* wellbeing" or "selfassess* wellbeing" or "self-report* wellbeing" or "selfreport* wellbeing" or "self-perceived wellbeing" or "selfperceived wellbeing" or "self-rated wellness" or "selfrated wellness" or "self-assess* wellness" or "selfassess* wellness" or "self-report* wellness" or "selfreport* wellness" or "self-perceived wellness" or "selfperceived wellness") OR ("self-rated of wellbeing" or "selfrated of wellbeing" or "self-assess* of wellbeing" or "selfassess* of wellbeing" or "self-report* of wellbeing" or "selfreport* of wellbeing" or "self-perceived of wellbeing" or "selfperceived of wellbeing" or "self-rated of wellness" or "selfrated of wellness" or "self-assess* of wellness" or "selfassess* of wellness" or "self-report* of wellness" or "selfreport* of wellness" or "self-perceived of wellness" or "selfperceived of wellness") OR ("self-perception* of wellbeing" or "selfperception* of wellbeing" or "self-perception* of wellness" or "selfperception* of wellness") OR ((benefit* or chang* or effect* or enhanc* or gain* or improv* or increas* or maintain* or maximis* or maximiz* or promot* or rais* or sustain* or influence* or impact* or affect*) SAME ("self-esteem" or "life satisfaction" or "purpose in life")) OR ((benefit* or chang* or effect* or enhanc* or gain* or improv* or increas* or maintain* or maximis* or maximiz* or promot* or rais* or sustain* or influence* or impact* or affect*) SAME ("personal growth" or morale or "positive outlook" or "positive mental")) OR ((prevent* or reduc* or minimis* or minimiz* or restrict* or limit* or combat*) SAME (dependence or discrimination or loneliness or exclusion or anxiety or distress or stress or "mental fatigue")) OR "social support" OR ((benefit* or chang* or effect* or enhanc* or gain* or improv* or increas* or maintain* or maximis* or maximiz* or promot* or rais* or sustain* or influence* or impact* or affect*) SAME "mental health") OR "level* of mental health" OR ("self-rated mental health" or "selfrated mental health" or "self-assess* mental health" or "selfassess* mental health" or "self-report* mental health" or "selfreport* mental health" or "self-perceived mental health" or "selfperceived mental health") OR ("self-rated of mental health" or "selfrated of mental health" or "self-assess* of mental health" or "selfassess* of mental health" or "self-report* of mental health" or "selfreport* of mental health" or "self-perceived of mental health" or "selfperceived of mental health") OR ("self-perception* of mental health" or "selfperception* of mental health") OR ((benefit* or chang* or effect* or enhanc* or gain* or improv* or increas* or maintain* or maximis* or maximiz* or promot* or rais* or sustain* or influence* or impact* or affect*) SAME health) OR ("health status" or "health state*") OR "level* of health" OR ("health behaviour*" or "health behavior*") OR ("self-rated health" or "selfrated health" or "self-assess* health" or "selfassess* health" or "self-report* health" or "selfreport* health" or "self-perceived health" or "selfperceived health") OR ("self-rated of health" or "selfrated of health" or "self-assess* of health" or "selfassess* of health" or "self-report* of health" or "selfreport* of health" or "self-perceived of health" or "selfperceived of health") OR ("self-

perception* of health" or "selfperception* of health")
Green Space Syntax
(greenspace* or "green space*") or ("urban nature" or "urban biodiversity") or "open space*" or (parkland* or "park land*") or ("public park*" or "municipal park*" or "botanic* park*" or "community park*" or "urban park*" or "suburban park*" or "city park*") or ("public garden*" or "municipal garden*" or "botanic* garden*" or "community garden*" or "city garden*") or ("green path*" or "green trail*") or (greenway* or greenbelt* or "green belt*") or (allotment* SAME (garden* or vegetable*)) or ("urban planting" or "urban landscaping") or ("urban of planting" or "planting of urban" or "urban of landscaping" or "landscaping of urban") or ("common land*" or heathland* or strays) or ("sport* field*" or "sport* ground*") or (brownfield* or "brown field*") or ("railway* embankment*" or "railroad* embankment*" or "canal* embankment*" or "highway* embankment*" or "road* of embankment*") or ("railway* of embankment*" or "embankment* of railway*" or "railroad* of embankment*" or "embankment* of railroad*" or "canal* of embankment*" or "embankment* of canal*" or "highway* of embankment*" or "embankment* of highway*" or "road* of embankment*" or "embankment* of road*") or ("urban wood*" or "urban woodland*") or "urban wilderness" or (cemetries or cemeteries or cemetry or cemetery)

Reference:

Croucher, K., Myers, L. & Bretherton, J. (2007). *The links between greenspace and health: a critical literature review*. Stirling, UK: Greenspace Scotland. Retrieved from https://www.york.ac.uk/media/chp/documents/2008/greenspace2008.pdf

Appendix C: The provenance of the search syntax

Bowler, Knight and Pullin (2009) examined the quality of literature reviews on nature and health and assessed the utility of the reviews as tools to inform the development of evidence based policy. Of 77 relevant literature reviews identified up until the end of January 2008, only nine met all the following appraisal criteria:

- Was the review question defined?
- Was the search strategy defined in terms of keywords and databases used?
- Were the criteria used to include/exclude studies from the review stated?
- Is there any evidence of quality appraisal of research methodology in interpreting the findings of any of the studies discussed?
- Has the material discussed been drawn together into an overall conclusion or summary statement?
- If so, is there any evidence that the strength of the conclusions have been weighted by the methodological quality of the studies?
- Or, is there any evidence that the strength of conclusions have been weighted by the quantity and/or focus of studies available?

(Bowler, Knight & Pullin, 2009, p.6)

Table C.1 shows the nine reviews that met all the appraisal criteria.

Table C.1 Reviews which met all the critical appraisal criteria in Bowler, Knight and Pullin's report (2009, p.9)

Author	Year	Title	Focus
Clark, C., Myronn, R., Stansfield, S., & Candy, B.	2006	A systematic review of the evidence on the effect of the built and physical environment on mental health	Impact of physical environment (built and natural) on mental health
Croucher, K., Myers, L., & Bretherton, J.	2007	The links between greenspace and health: A critical literature review	Links between greenspace, particularly in urban areas on physical, mental and social wellbeing
Davies, P., & Deaville, J.	2008	Natural heritage: A pathway to health	Impact of the natural environment on health and wellbeing
Foster, C., Hillsdon, M., Jones, A., & Panter, J.	2006	Assessing the relationship between the quality of urban green space and physical activity	The relationship between aspects of greenspace and physical activity
Jones, M., & Haight, B.	2002	Environmental transformation: An integrative review	Use of the natural environment as a therapeutic intervention
Kaczynski, A., & Henderson, K.	2007	Environmental correlates of physical activity: A review of evidence about parks and recreation	The relationship between parks and recreation settings (indoor and outdoor) and physical activity
National Institute for Health and Care Excellence	2006	Physical activity and the environment: Review 3: Natural environment	The relationship between parks and recreation settings (indoor and outdoor) and physical activity

Author	Year	Title	Focus
Sempik, J., Aldridge, J., & Becker, S.	2003	Social and therapeutic horticulture: Evidence and messages from research	The effect of horticulture and gardening on health and wellbeing
Van den Berg, A.E.	2005	Health impacts of healing environments: A review of the benefits of nature, daylight, fresh air and quiet in healthcare settings	The benefits of nature, daylight, fresh air and quiet in healthcare settings

References:

Bowler, D.E., Knight, T.M., & Pullin, A.S. (2009). *The value of contact with nature for health promotion: How the evidence has been reviewed.* University of Bangor: Centre for Evidence-Based Conservation. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.369.109&rep=rep1&type=pdf

Clark, C., Myronn, R., Stansfield, S., & Candy, B. (2006). A systematic review of the evidence on the effect of the built and physical environment on mental health. *Journal of Public Mental Health, 6*(2), 14-27. http://dx.doi.org/10.1108/17465729200700011

Croucher, K., Myers, L., & Bretherton, J. (2007). *The links between greenspace and health: a critical literature review*. Stirling, UK: Greenspace Scotland.

Davies, P., & Deaville, J. (2008). *Natural heritage: A pathway to health*. Institute of Rural Health, Policy Research Report No. 07/20. Bangor, UK: Countryside Council for Wales.

Foster, C., Hillsdon, M., Jones, A., & Panter, J. (2006). *Assessing the relationship between the quality of urban green space and physical activity.* Prepared for CABE Space.

Jones, M., & Haight, B. (2002). Environmental transformation: An integrative review. *Journal of Gerontological Nursing, 28*(3), 23-27. doi: 10.3928/0098-9134-20020301-06

Kaczynski, A., & Henderson, K. (2007). Environmental correlates of physical activity: A review of evidence about parks and recreation. *Leisure Sciences, 29,* 315-354. doi:10.1080/01490400701394865

National Institute for Health and Clinical Excellence (2006). *Physical activity and the environment. Review three: Natural environment.* London, UK: NICE Public Health Collaborating Centre.

Sempik, J., Aldridge, J., & Becker, S. (2003). *Social and therapeutic horticulture: Evidence and Messages from Research.* Leicestershire, UK: University of Loughborough.

Van den Berg, A.E. (2005). *Health impacts of healing environments: A review of the benefits of nature, daylight, fresh air and quiet in healthcare settings*. Groningen, Netherlands: University Medical Centre Groningen.

Appendix D: Searching for documents on the Department of Health (DH) website

About the department

The Department of Health was formally created in 1988, through The Transfer of Functions (Health and Social Security) Order 1988. The purpose of the department is to improve health and wellbeing and to provide better care and value for all. There are five key priorities listed on the website (DH, 2012):

- A patient-led NHS;
- Delivering better health outcomes;
- A more autonomous and accountable system;
- Improved public health;
- Reforming long-term and social care.

Publications: Green and White Papers

Green Papers set out for discussion proposals which are still at a formative stage. White Papers are issued by the Government as statements of policy, and often set out proposals for legislative changes, which may be debated before a Bill is introduced.

Table D.1 sets out the search strategy for locating the Green and White Papers. The information was retrieved on 8 August 2012 (the website had last been modified on 17 July 2012).

Table D.1 Strategy used to search the DH website

Strategy	http site
Home	http://www.dh.gov.uk/en/index.htm
Go to publications	http://www.dh.gov.uk/health/category/publications/
Enter 'Green and White Papers list' in search box	
Click on 'Green and White Papers'	http://www.dh.gov.uk/health/search?q=green%20and%20white%20papers%20list
2010-2012 list appears at	http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/DH_4122399
Click on 'archive' for 1996 onwards	http://webarchive.nationalarchives.gov.uk/20100407034821/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/DH_4122399

Strategy	http site			
Results	Number of publications on website	Number of descriptors screened	Number of full documents screened	Number with relevant findings
	32	32	23	3

All 32 documents were initially screened by title and if thought relevant to the research then the publication descriptor was perused. If this indicated possible content about 'contact with nature to enhance health' then the full document was screened for the following words using the 'find' option: green, green space, nature, natural, environment, benefit. This resulted in 3 documents.

Other publications on the Department of Health website

In addition to searching for White and Green Papers more general public health papers were located on the Department of Health website. Table D2 sets out the search strategy for locating publications under the exact phrase 'public health'. The information was retrieved on 9 September 2012.

Table D.2 Further strategy used to search the DH website

Strategy	http site			
Home	http://www.dh.gov.uk/en/index.htm			
Go to publications	http://www.dh.gov.uk/health/category/publications/			
Click on 'search the publications archive'	http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsLibrary/index.htm			
Enter public health in 'search terms' and select 'exact phrase' and tick 'publications'	http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsLibrary/Publicationslibrarysearchresults/index.htm?&searchTerms=public%20health&selection=3&isAdvancedSearch=LetterCircularLibrary&defaultCategory=551&taxonomyLibraryNodeID=572/&element1=553&element1=553			
2010-2012 list appears at	http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/DH_4122399			
Click on 'archive' for 1996 onwards	http://webarchive.nationalarchives.gov.uk/20100407034821/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/DH_4122399			
Results	Number of publications on website	Number of descriptors screened	Number of full documents screened	Number with relevant findings
	314	314	108	7

All 314 documents were initially screened by title and if thought relevant to the research then the publication descriptor was perused. If this indicated possible content about 'contact with nature to enhance health' then the document was

screened for the following words: green, green space, nature, natural, environment, benefits. This resulted in seven documents making a total of ten for the Department of Health.

Reference:

Department of Health. (2012, August 8) *About us.* Retrieved from http://www.dh.gov.uk/health/about-us/

Appendix E: Searching for documents on the Department for Environment, Food and Rural Affairs (DEFRA) website

About the department

DEFRA was formed in 2001 when the Ministry of Agriculture, Fisheries and Food (MAFF) was merged with part of the Department of the Environment, Transport and the Regions (DETR) and with a small part of the Home Office. There are three top priorities set out within DEFRA's Business Plan for 2012-15 (DEFRA, 2012):

- Support and develop British farming and encourage sustainable food production;
- Enhance the environment and biodiversity to improve quality of life;
- Support a strong and sustainable green economy, including thriving rural communities, resilient to climate change.

Publications on the DEFRA website are listed under five main headings namely 1) about DEFRA, 2) environment, 3) food and farming, 4) rural and countryside, 5) wildlife and pets. Categories 1) and 3) are further sub-divided into sustainable development and animal health respectively.

Publications were not separated out into Green and White Papers (as with the Department of Health website). On Thursday 9 August 2012 a telephone call was made to the DEFRA library (02072 386575) to request a definitive list of the Green and White Papers but the librarian reported that a definitive list was not available.

Table E.1 sets out the search strategy for locating DEFRA publications. The information was retrieved on 9, 10, 24 August 2012 and 9 September 2012.

Table E.1 Strategy used to search the DEFRA website

Strategy	http site
Home	http://www.defra.gov.uk/
Look for the 'Resources' box	
Click on 'forms, publications and data'	http://www.defra.gov.uk/corporate/docs/
Click on 'Defra publications'	http://www.defra.gov.uk/publications/
Click on 'about DEFRA'	http://www.defra.gov.uk/publications/category/about/

Strategy	http site				
Alternatively click on 'sustainable development' in the box'	http://www.defra.gov.uk/publications/category/about/sustainable-development/				
Alternatively click on 'environment' in the box'	http://www.defra.gov.uk/publications/category/environment/				
Alternatively click on 'food and farming' in the box'	http://www.defra.gov.uk/publications/category/food-and-farming/				
Alternatively click on 'animal health' in the box'	http://www.defra.gov.uk/publications/category/food-and-farming/animal-health/				
Alternatively click on 'rural and countryside' in the box'	http://www.defra.gov.uk/publications/category/rural/				
Alternatively click on 'wildlife and pets' in the box'	http://www.defra.gov.uk/publications/category/wildlife-and-pets/				
Results		Number of publications on website	Number of descriptors screened	Number of full documents screened	Number with relevant findings
	About DEFRA	62	62	0	0
	Sustainable development	7	7	7	3
	Environment	169	169	15	10
	Food and farming	104	104	0	0
	Animal health	28	28	0	0
	Rural and countryside	18	18	1	1
	Wildlife and pets	18	18	5	2
	Totals	406	406	28	16

All 406 documents were initially screened by title and if thought relevant to the research then the publication descriptor was perused. If this indicated possible content about 'contact with nature to enhance health' then the full document was screened for the following words using the 'find' option: green, green space, nature, natural, environment, benefit. This resulted in 16 documents.

Reference:

Department for Environment, Food and Rural Affairs. (2012, August 10). *About.* Retrieved from http://www.defra.gov.uk/ corporate/about/what/

Appendix F: Searching for documents on the Department for Culture, Media and Sport (CMS) website

About the department

The Department for Culture, Media and Sport originates from the Department of National Heritage which itself was created on 11 April 1992 out of various other government departments. The Department of National heritage was renamed as the Department for Culture, Media and Sport on 14 July 1997.

The aim of the Department is to "improve the quality of life for all through cultural and sporting activities, support the pursuit of excellence, and champion the tourism, creative and leisure industries" (DCMS, 2012, p.2).

Table F.1 sets out the search strategy for locating publications on the Department for Culture, Media and Sport website. The information was retrieved on 23 September 2012.

Table F.1 Strategy used to search the DCMS website

Strategy	http site				
Home	http://www.culture.gov.uk/index.aspx				
Go to publications	http://www.culture.gov.uk/publications/default.aspx				
Click on 'archive 2012'	http://www.culture.gov.uk/publications/8747.aspx				
Alternatively click on 'archive 2011'	http://www.culture.gov.uk/publications/7678.aspx				
Alternatively click on 'archive 2010'	http://www.culture.gov.uk/publications/6552.aspx				
Results		Number of publications on website	Number of descriptors screened	Number of full documents screened	Number with positive finding
	Archive 2012	41	41	0	0
	Archive 2011	89	89	1	1
	Archive 2010	53	53	0	0
	Totals	183	183	1	1

All 183 documents were initially screened by title and if thought relevant to the research then the publication descriptor was perused. If this indicated possible content about 'contact with nature to enhance health' then the full document was

screened for the following words using the 'find' option: green, green space, nature, natural, environment, benefit. This resulted in one document.

On 23 September 2012 essential work on the website did not allow an examination of the Archives between 1998 and 2009 (inclusive). The first page was visible and accessible but there was nothing relevant from the front page. On 10 November 2012 the Department for Culture, Media and Sport website was again accessed to screen the archives between 1998 and 2009 (inclusive) but archives for these dates were not listed.

On 19 December 2012 the archives for publications 1998-2009 were visible and therefore accessed. Table F.2 sets out the search strategy for locating these publications on the Department for Culture, Media and Sport website.

Table F.2 Further strategy used to search the DCMS website

Strategy	http site
Home	http://www.culture.gov.uk/index.aspx
Go to publications	http://www.culture.gov.uk/publications/default.aspx
Click on UK Government web archive	http://webarchive.nationalarchives.gov.uk/20100407120701/http://www.culture.gov.uk/reference_library/publications/default.aspx
Click on 'archive 2009'	http://webarchive.nationalarchives.gov.uk/20100407120701/http://www.culture.gov.uk/reference_library/publications/5713.aspx
Alternatively click on 'archive 2008'	http://webarchive.nationalarchives.gov.uk/20100407120701/http://www.culture.gov.uk/reference_library/publications/3100.aspx
Alternatively click on 'archive 2007'	http://webarchive.nationalarchives.gov.uk/20100407120701/http://www.culture.gov.uk/reference_library/publications/3101.aspx
Alternatively click on 'archive 2006'	http://webarchive.nationalarchives.gov.uk/20100407120701/http://www.culture.gov.uk/reference_library/publications/3099.aspx
Alternatively click on 'archive 2005'	http://webarchive.nationalarchives.gov.uk/20100407120701/http://www.culture.gov.uk/reference_library/publications/3102.aspx
Alternatively click on 'archive 2004'	http://webarchive.nationalarchives.gov.uk/20100407120701/http://www.culture.gov.uk/reference_library/publications/3104.aspx
Alternatively click on 'archive 2003'	http://webarchive.nationalarchives.gov.uk/20100407120701/http://www.culture.gov.uk/reference_library/publications/3103.aspx
Alternatively click on 'archive 2002'	http://webarchive.nationalarchives.gov.uk/20100407120701/http://www.culture.gov.uk/reference_library/publications/3106.aspx
Alternatively click on 'archive 2001'	http://webarchive.nationalarchives.gov.uk/20100407120701/http://www.culture.gov.uk/reference_library/publications/3105.aspx

Strategy	http site					
Alternatively click on 'archive 2000'	http://webarchive.nationalarchives.gov.uk/20100407120701/http://www.culture.gov.uk/reference_library/publications/3107.aspx					
Alternatively click on 'archive 1999'	http://webarchive.nationalarchives.gov.uk/20100407120701/http://www.culture.gov.uk/reference_library/publications/3108.aspx					
Alternatively click on 'archive 1998'	http://webarchive.nationalarchives.gov.uk/20100407120701/http://www.culture.gov.uk/reference_library/publications/3109.aspx					
Results	Archive date	Number of publications claimed to be on website	Actual number of publications/ descriptors	Number of descriptors screened	Number of full documents screened	Number with relevant findings
	2009	91	10	10	0	0
	2008	80	10	10	0	0
	2007	108	10	10	0	0
	2006	88	10	10	0	0
	2005	66	10	10	0	0
	2004	72	10	10	0	0
	2003	60	10	10	0	0
	2002	68	10	10	1	0
	2001	48	10	10	1	1
	2000	47	10	10	2	0
	1999	23	10	10	0	0
	1998	13	10	10	1	0
	Totals	664	120	120	5	1

All 120 documents were initially screened by title and if thought relevant to the research then the publication descriptor was perused. If this indicated possible content about 'contact with nature to enhance health' then the full document was screened for the following words using the 'find' option: green, green space, nature, natural, environment, benefit. This resulted in one document making a total of two for the Department for Culture, Media and Sport.

Reference:

Department for Culture, Media and Sport. (2012). *The Department for Culture, Media and Sport and the United Kingdom's Overseas Territories.* Retrieved from http://www.culture. gov.uk/images/publications/dcms-uk-overseas-territories.pdf

Appendix G: Searching for documents on the Department for Communities and Local Government (CLG) website

About the department

The Department for Communities and Local Government (DCLG) is the government department for communities and local government in England. It was established in May 2006 and is the successor to the Office of the Deputy Prime Minister, established in 2001. Prior to 2001 the Department of the Environment, Transport and the Regions (DETR) existed. In June of 2001 the Environment portfolio merged with the Ministry of Agriculture, Fisheries and Food to become DEFRA (the Department for Environment, Food and Rural Affairs). The Department for Communities and Local Government (DCLG) aims to foster prosperous and cohesive communities, offering a safe, healthy and sustainable environment for all (DCLG, 2012).

The Department for Communities and Local Government has an extensive remit that is delivered through six main policy areas namely:

- Communities and neighbourhoods;
- Fire and emergencies;
- Housing;
- Local government;
- Planning, building and the environment;
- Regeneration and economic growth.

The DCLG website is organised around these six interlinking policy areas within a corporate framework. After some preliminary searches for publications and policies about green space in each of the six policy areas, five of the policy areas were selected for further scrutiny. The policy area 'fire and emergencies' did not elicit any initial relevant results and was therefore filtered out in the final search strategy. For searching the Department for Communities and Local Government website the term 'green space' was used in preference to the term 'natural environment' used by the Department of the Environment, Food and Rural Affairs. The term green space (defined in Chapter 1, Section 1.3) is the term more commonly used by local government. Table G.1 sets out the search strategy for locating DCLG publications. The information was retrieved on 29 September 2012.

The advanced search facility also lists thirteen different types of publication. Seven of the publication types yielded results with significant relevance to policy. Upon further examination the other six types of publication had limited relevance to policy and were therefore filtered out of the final search process. These were:

- Circulars and letters;
- Corporate reports;
- Impact assessments;
- Manuals, leaflets and booklets;
- Newsletters;
- Statistics.

Table G.1 Strategy used to search the DLCG website

Strategy	http site			
Home	http://www.communities.gov.uk/corporate/			
Click on 'Advanced search'	http://www.communities.gov.uk/corporate/?view=Gsearch+form			
Filter by selecting: • Communities & neighbourhoods • Housing • Regeneration & economic growth • Local government • Planning, building & the environment				
Filter 'publication types' by selecting: • Consultation documents • Consultation responses • Good practice and guidance • Legislation and policy • Reports and summaries • Research • Strategies and action plans				
Enter "green space" in the keyword box				
Enter date range: 01/01/1997 to 29/09/2012				
Sort by relevance then click 'Search'	http://www.communities.gov.uk/corporate/?view=Search+results&query=green+space&contentTypes=all&contentTypes=general&contentTypes=publications&contentTypes=news&contentTypes=Case+Study&contentTypes=Meeting+Papers&contentTypes=FOI&startdate_day=01&startdate_month=01&startdate_year=1997&enddate_day=29&enddate_month=09&enddate_year=2012&sites=all+sites&includeArchived=yes&resultsPerPage=20			
Results	Number of publications generated by the search	Number of descriptors screened	Number of full documents screened	Number with relevant findings
	153	150	105	14

The search yielded a total of 153 results but three of these were duplicates, for example *Green Spaces, Better Places: Final Report of the Urban Green Spaces Taskforce* (DCLG, 2002) appeared twice. The duplicates were discounted. All 153 documents were initially screened by title and if thought relevant to the research then the publication descriptor was perused. If this indicated possible content about 'contact with nature to enhance health' then the full document was screened for the following words using the 'find' option: green, green space, nature, natural, environment, benefits, health, wellbeing. This resulted in 14 documents.

Reference:

Department for Communities and Local Government. (2012, August 12). *About us.* Retrieved from http://www.communities.gov.uk/corporate/about/

Department for Transport, Local Government and the Regions. (2002). *Green spaces, better places: Final report of the Urban Green Spaces Taskforce.* Wetherby, UK: DTLR. Retrieved from: http://www.ocs.polito.it/biblioteca/verde/taskforce/gspaces_.pdf

Appendix H: Searching for documents on the Department for Education (DE) website

About the department

The Department for Education is responsible for education issues affecting people in England up to the age of 19. The Department for Education was formed on 12 May 2010 by the Conservative/LibDem coalition government. The department was previously known as the Department for Children, Schools and Families and covered a similar remit.

For searching the Department for Education website the term 'outdoor play' was used in addition to the term 'natural environment' used by the Department of the Environment, Food and Rural Affairs. The term outdoor play is the term more commonly used in the primary and junior school sectors. Table H.1 sets out the search strategy for locating DE publications. The information was retrieved on 6 October 2012.

Table H.1 Strategy used to search the DE website

Strategy	http site				
Home	http://www.education.gov.uk/				
Go to publications	https://www.education.gov.uk/publications				
Click on advanced search	http://www.education.gov.uk/search				
Enter 'natural environment' in keyword box	http://www.education.gov.uk/search/results?q='natural+environment'				
Filter by publication	http://www.education.gov.uk/search/results?q='natural+environment'&f_contentType=Publication&page=1 Generates 103 results				
Sort by Date	http://www.education.gov.uk/search/results?q='natural+environment'&f_contentType=Publication&sort=date+desc				
Alternatively enter 'outdoor play' in keyword box	http://www.education.gov.uk/search/results?q='outdoor+play'				
Filter by publication	http://www.education.gov.uk/search/results?q='outdoor+play'&f_contentType=Publication&page=1 Generates 107 results				
Sort by Date	http://www.education.gov.uk/search/results?q='outdoor+play'&f_contentType=Publication&sort=date+desc				
Results		Number of publication on website	Number of descriptors screened	Number of full documents	Number with relevant

Strategy	http site				
				screened	findings
	Natural environment	103	103	5	2
	Outdoor play	107	107	9	3
	Totals	210	210	14	5

All 210 documents were initially screened by title and if thought relevant to the research then the publication descriptor was perused. If this indicated possible content about 'contact with nature to enhance health' then the full document was screened for the following words using the 'find' option: green, green space, nature, natural, environment, benefits, health, wellbeing, outdoor play. This resulted in five documents.

Reference:

Department for Education website. (2012, October 6). *About the Department.* Retrieved from http://www.education.gov.uk/aboutdfe

Appendix I: Searching the websites of organisations in Greater Manchester for examples of contact with nature activities

Table I.1 sets out the search strategy for locating health enhancing contact with nature activities in Greater Manchester July to October 2013.

Table I.1 Strategy used to search the websites of organisations in Greater Manchester

Organisation	Search strategy	Identified via:	Relevant partnerships and alliances as per website
Canal and River Trust	www.canalrivertrust.org.uk	Local Nature Partnership	
Community Forest – Red Rose • (Central and Western Greater Manchester)	http://www.redroseforest.co.uk/web/content/view/234/376/	Local Nature Partnership	
Community Forest – Pennine Edge • (Oldham, Rochdale, Stockport and Tameside)	http://www.pennineedgeforest.org.uk/who-we-are	Red Rose Forest	Local Authorities (Oldham, Rochdale, Stockport, Tameside), Groundwork Trusts, The Conservation Volunteers, Forestry Commission, support from Red Rose Forest
DEFRA	http://www.defra.gov.uk	Policy documents (Study 2)	NHS
Dig the City	http://www.digthecity.co.uk/listings/	Snowballing via website searches Fieldwork - August 2013 event	CityCo, Manchester City Council, Manchester Cathedral, Manchester Museums Partnership, National Trust, Groundwork, The Cooperative Group
Districts and AGMA: Bolton Bury Oldham Rochdale Salford Stockport Tameside Trafford Wigan	http://www.bolton.gov.uk/website/pages/Walking.aspx http://www.bury.gov.uk/index.aspx http://www.oldham.gov.uk/ http://www.rochdale.gov.uk/ http://www.salford.gov.uk/ http://www.stockport.gov.uk/ http://www.tameside.gov.uk/ http://www.trafford.gov.uk/ http://www.wigan.gov.uk/	Local Nature Partnership	NHS
Environment Agency	http://www.environment-agency.gov.uk/	Local Nature Partnership	

Organisation	Search strategy	Identified via:	Relevant partnerships and alliances as per website
Forest Schools	https://www.facebook.com/ManchesterForestSchool	Policy documents (Study 2)	
Friends of the Earth	http://www.foe.co.uk/	Snowballing via website searches	
Greater Manchester Ecology Unit	http://www.tameside.gov.uk/ecologyunit	Snowballing via website searches	
Greater Manchester Local Record Centre	http://www.gmwildlife.org.uk/index.php	Local Nature Partnership	Greater Manchester Ecology Unit (GMEU), local recorders, Bolton Museum, Natural England, Environment Agency, the Local Authorities of Greater Manchester
Groundwork • Bury and Bolton • Lancashire West and Wigan • Manchester, Salford, Stockport, Tameside and Trafford (MSSTT) • Oldham and Rochdale	http://www.northwest.groundwork.org.uk/ Personal contact, Sustainable Communities Manager, MSSTT, 8th July 2013	Policy documents (Study 2) Target Wellbeing	NHS Trusts, Clinical Commissioning Groups, Housing Associations, Being Well Salford, Association of Manchester Allotment Societies
Healthy Cities Network	http://www.healthycities.org.uk/uploads/citys/Healthy%20Cities%20online%20Spread_22-23.pdf Personal contact, Co-ordinator Healthy City Network, based in the Healthy Settings Unit, 12th July 2013	Snowballing via website searches	
Manchester Museum	museum@manchester.ac.uk	Snowballing via website searches Fieldwork – exhibition visit August 2013	
NHS	Personal contact, NHS Communications, 8 July 2013	Policy documents (Study 2)	Local Authorities
National Trust in Greater Manchester • Dunham Massey • Holcombe Moor	http://www.nationaltrust.org.uk NT Magazine	Policy documents (Study 2) Grey literature Fieldwork – Sept 2013	Play England, NHS Sustainable Development Unit

Organisation	Search strategy	Identified via:	Relevant partnerships and alliances as per website
Natural England	http://www.naturalengland.org.uk/	Policy documents (Study 2)	
Prison Service	http://www.justice.gov.uk/contacts/prison-finder	Fieldwork - RHS Tatton Flower Show July 2013	University of Central Lancashire, The Conservation Volunteers, Forestry Commission, Groundwork, Primary Care Trusts, Lancashire County Council
Ramblers	http://www.ramblers.org.uk/ Personal contact, walk leader, Manchester area, 29 October 2013	Natural England	MacMillan Cancer Support, Manchester City Council, Manchester Mental Health and Social Care Trust, Red Rose Community Forest
RSPB	http://homes.rspb.org.uk	Policy documents (Study 2) Grey Literature Fieldwork – Bird and Butterfly Walk July 2013	
Salford Friendly Anglers	http://www.salfordfriendlyanglers.co.uk/page1.php	Snowballing via website searches	
Sure Start • Sandbrook, Rochdale • Woodlands, Rochdale • Royton Shaw and Crompton, Oldham	http://www.rochdale.gov.uk/schools_and_children/sure_start_childrens_centres.aspx http://www.oldhamcya.org.uk/info/upload/RSC-timetable-July-and-August-2013.pdf	Local Authority websites	NHS
Target Wellbeing	http://www.targetwellbeing.org.uk/about	Groundwork	
The Blue Gym	http://bluegym.wireworksdigital.co.uk/	Environment Agency	
The Conservation Volunteers	http://www.tcv.org.uk/	Policy documents (Study 2)	
The Woodland Trust	http://www.woodlandtrust.org.uk/e	Community Forest websites	
Wildlife Trust • Cheshire (Stockport, Tameside, Trafford)	http://www.cheshirewildlifetrust.org.uk/		Play England, NHS Sustainable Development Unit, RSPB

Organisation	Search strategy	Identified via:	Relevant partnerships and alliances as per website
Wildlife Trust • Lancashire (covering Greater Manchester)	http://www.lancswt.org.uk/Our-Workhttp://www.lancswt.org.uk/what-s-on Personal contact, Reserve Manager, Wigan Flashes, 8 October 2013	Local Nature Partnerships	Department for Education
Visit Manchester (the tourist board for Greater Manchester)	http://www.visitmanchester.com	Snowballing via website searches	

Appendix J: Health walks in Greater Manchester

Table J.1 shows health walks in Greater Manchester during the month of October 2013. The information was taken from the Walking for Health (2013) website.

Table J.1 Health walks in Greater Manchester

	As listed on website	Organiser	Promotional/organisational literature
1	Levenshulme Health Walks (Manchester)	The Energy Box – voluntary group.	The outdoors is a natural medicine. Growing medical evidence shows that access to the natural environment improves health and wellbeing, prevents disease and helps people recover from illness … we take Fallowfield Cycle loop towards Reddish Vale and enjoy the beautiful scenery of this nature reservoir. There is a longer stop for refreshments and you are welcome to visit the animal farm and stables.
2	University of Manchester	University of Manchester	We try to incorporate local green spaces into our walks. Biodiversity Walks, at least once per season, may replace a Wednesday walk or held on another day. With guest speakers including the Head of Collections and Curator of Zoology at The Manchester Museum. Booklets are provided to identify wildlife during the walks.
3	Stockport – Reddish Vale Country Park	Community group	Have changes in your health made you look for new ways to be more active? Are you interested in walking as part of a new healthier lifestyle? The Walking for Health programme is aimed at people who may not have been active for some time or who may have a health condition which would benefit from physical activity.
4	Stockport - Walkaday	Stockport Council & NHS	Our walks are slightly longer than standard one hour health walks and are ideal for those wishing to progress and improve their fitness further.
5	Tameside – Haughton Green Health Walk	Community group	No information
6	Manchester – Physical Activity Referral Service (PARS)	NHS	Walking works! If you find it difficult to get active, why not start walking? It's really easy to get started, you don't need any special equipment - and best of all it counts towards your recommended amount of physical activity. Walking can improve your health, your happiness and, if you join one of our groups, it will give you the chance to explore the outdoors, get to know your local area and meet new people. What's stopping you? Sometimes a walk alone in the fresh air is just what we need. But if you're just getting started and you're not sure that you want to do all your walking alone - or if you like the idea of having other people around to help you stay motivated - then walk with us.

	As listed on website	Organiser	Promotional/organisational literature
7	Trafford - Stride	Trafford Leisure/ Trafford Council	Health walks are perfect for people with health conditions wanting to help control / improve their condition using moderate physical activity. A brisk health walk can also maintain healthy weight, support mental health and increase social status. (Of Dunham Massey) … a magnificent 300-acre deer park surrounding a Georgian house within Altrincham. Wander around the grounds and gardens or attend a guided deer walk
8	Tameside Health Walks	Community group	Walking has tremendous health benefits and you don't have to be super fit as we go at a pace to suit our walkers. Get fitter trim your waist and boost your energy. Make new friends too.
9	Stockport – Walk Stockport	NHS	Have changes in your health made you look for new ways to be more active? Are you interested in walking as part of a new healthier lifestyle? Have you been a keen walker in the past, but has your recent health prevented you from taking part in group physical activities? Then why not walk your way to health and feel fitter, healthier and happier!
10	Blackley Forest Nature Reserve Health Walks (Manchester)	The Friends of Blackley Forest	Blackley Forest Nature Reserve invites you to take a walk on the wild side in Blackley Forest. Meet at the Victoria Avenue entrance to the forest just before dusk. Please note that the bat walks will not take place if it is raining since the bats will not fly in rain.
11	Salford: Walking for All	Salford Community Leisure/ Salford Council	Aims to set up Health Walks across the city, for people who do little/no exercise or live in areas of poor health. Various walks across the city are already set up: country parks, urban, countryside, town parks. Walking for All is working with health professionals and others in the community to develop walks for specific groups, for example a parents group for people with small children, and a heart care group.
12	Tameside: Hattersley Health Walks	Community group	Ideal for those who would like to try country walking as a gentle healthy exercise. Some people have been referred to us by their GP or community nurse. More experienced walkers and supervised children also welcome.
13	Oldham – Let's Go For A Walk	Pennine Care NHS Foundation Trust & Oldham Council.	Join us for a great way to have fun and get active around Oldham's parks and countryside. Walk your way to a healthier lifestyle across the borough's fantastic parks and countryside locations.
14	Stockport: Walking at Windlehurst	Community group	Weekly walks in and around the Windlehurst area.
15	Walk & Talk Boroughwide Health Walks (Rochdale)	NHS Various community groups	We have walks on each week day setting off at the same time and day each week, walking through woodlands, down country lanes and crossing open countryside.

	As listed on website	Organiser	Promotional/organisational literature
16	Oldham: Lees Health Walks	Community group	Once a month 'Out & About' walks take us to areas outside the local walks – country parks, local reservoirs, green areas, local lakes and canals.
17	Bury: Health Walks	Ranger service/Bury Council	We are encouraging people to walk around their local area, the urban parts of Bury and surrounding towns rather than travelling out to the countryside. Walking is such a good form of exercise because: • An extra 20 minutes a day can burn off an extra 7 pounds of body fat per year. • It can lower blood pressure and cholesterol. • It can help relieve stress. • Strengthens the muscles in your hips and torso. • Helps the environment if you are walking instead of using a motor vehicle. • Gives you time to think and helps increase problem solving ability. • Improves your posture.
18	Moses Gate Country Park Walking Group (Bolton)	Community group	There is river, canal and lake scenery with plenty of water fowl activity, occasional sightings of deer and botanical interest e.g. orchids.
19	Bolton – Walk This Way	Bolton Council	Walking is a great way to increase your physical activity levels. It's free and doesn't require specialist equipment. Joining our led walk programme is a fantastic way to meet new friends, socialise and improve health.
20	Wigan: Active Living	Wigan Leisure & Culture Trust/Wigan Council	Our walks aim to use Wigan Borough's glorious green space to encourage adults of all ages and abilities to become more active in a safe and sociable atmosphere. To celebrate the Queen's Jubilee celebrations of 2012, a series of fifteen Jubilee Legacy Walks have been developed to celebrate the richness and diversity of Wigan Borough's green space.

Reference:

Walking for Health. (2013, October 15). *Health walks within Greater Manchester.* Retrieved from http://www.walkingforhealth.org.uk/walksearch/

Appendix K: Examples of the information relating to the idea of contact with nature to enhance health taken from organisational websites July to October 2013

Table K.1 Examples of the information with corresponding theme

Organisations	Promotional/organisational literature	Theme
Canal and River Trust	Keeping people, nature and history connected. Engage in conservation projects that will improve skills, health and community cohesion whilst also protecting valuable wildlife habitats. http://canalrivertrust.org.uk/get-involved/appeals/fund-vital-conservation-projects-along-the-canals-of-east-manchester	Connectivity Ecosystem Approach
Community Forest – Pennine Edge • Oldham, Rochdale, Stockport and Tameside	We will create a high quality sustainable landscape, providing a green gateway to the region, rich in recreational opportunity, visual attraction and biodiversity. We will support local communities, their quality of life and opportunity and their aspirations for their environment. We will connect communities with the natural world on their doorstep (Pennine Edge Forest Business Action Plan 2004-2013 Executive Summary). http://www.pennineedgeforest.org.uk/who-we-are	Connectivity
Community Forest – Red Rose • Central and Western Greater Manchester	The parks, woodlands and nature reserves in Red Rose Forest and Pennine Edge Forest play a vital role in improving the quality of life in an urban environment, helping to reduce noise pollution, improve air quality, create a sense of wellbeing, promote biodiversity and meet the challenge of climate change. http://www.redroseforest.co.uk/web/content/view/234/376/	Wellbeing/Quality of life Wellbeing/Quality of life

Organisations	Promotional/organisational literature	Theme
DEFRA • MuckIn4Life • Love Your River	MuckIn4Life http://www.defra.gov.uk/muckin4life/ready/volunteering-countryside/ MuckIn4Life is the DEFRA campaign which supports the Department of Health's Change4Life campaign and is supported by a wide range of environmental stakeholders. It encourages biodiversity by highlighting the fun and enjoyment which comes from being active and volunteering outdoors in the fresh air to help conserve wildlife, landscapes, parks, gardens and other green spaces. http://www.manchesterbirding.com/generalnewsarchives1.htm Love Your River celebrates the importance of rivers to local people – for their health, well-being, leisure and sport. Through this initiative we want to … promote the value and benefits of our rivers to our everyday life. The National Trust is a UK conservation charity, protecting historic places and green spaces, and opening them up forever, for everyone. "We're delighted to be involved in the Love Your River campaign an amazing 43 per cent of the land in England and Wales drains to the boundary of National Trust owned land. Whether you earn your living from, travel on or play in the rivers of the UK, rivers can join us together, connect us back to the natural world and provide natural corridors for our wildlife." Simon Pryor, Natural Environment Director at the National Trust http://www.defra.gov.uk/loveyourriver/	Ecosystem Approach Wellbeing/Quality of Life Benefits Connectivity
Dig the City	Manchester's urban gardening festival – the event will inspire visitors as it transforms the city centre into a natural wonderland. With support from Manchester City Council, local residents and businesses our aim is to deliver a greener, healthier and more vibrant Manchester – a truly 21st century garden city. http://cityco.com/initiative/manchester-garden-city/ Beswick and Openshaw Community Food and Farm Project is a place for contact with nature and active healthier lifestyles (Clive Hamilton, presenter). Talks including: Beswick & Openshaw Community Food and Farm Project, 5th August 2013	Connectivity
Districts in Greater Manchester – Bolton	Everyday contact with nature is important for people's well-being and quality of life. Providing Local Nature Reserves helps to increase awareness and enjoyment of our native wildlife and offers people special opportunities to discover, learn about, and enjoy their local environment. http://www.bolton.gov.uk/website/pages/Localnaturereserves.aspx	Connectivity Wellbeing/Quality of Life

Organisations	Promotional/organisational literature	Theme
Districts in Greater Manchester - Manchester	Manchester is blessed with 138 green spaces dotted all over the city as well as more than its fair share of tree lined streets. So we can all enjoy this greenery while promoting our health…we've created a circuit of green routes that loops right around the city - Manchester's Green Corridor. Manchester City Council and the NHS have worked with the Ramblers to develop the walks and on this site you will find the 14 routes averaging 4 miles in length which make up the Green Corridor. Everything you need to know is here: length, average time, precise directions and points of interest. Get Walking! http://www.getwalking.org/walking-routes/manchester-green-corridor/	Across Sector Partnership
Districts in Greater Manchester – Stockport	Visiting the countryside can provide a real break from the stress of everyday life. You don't have to go far! Stockport is rich in countryside sites. http://www.stockport.gov.uk/services/leisureculture/parksandrecreation/countryside/ Taking on an allotment can be rewarding in many ways. It can provide delicious, home grown vegetables, fruit and flowers and at a fraction of shop prices. There is also a social side, enabling you to meet new people with similar interests. In addition you can enjoy healthy outdoor activity with the benefits of exercise and a place to unwind. http://www.stockport.gov.uk/services/leisureculture/parksandrecreation/allotments	Benefits
Districts in Greater Manchester - Tameside	Tameside's Countryside can seriously improve your Health! The countryside can be seen as a great outpatient department whose therapeutic value is yet to be fully realised. Source: Natural Fit by Dr William Bird Tameside's countryside is a great place for exercise and, as well as being good for the body, it's good for the soul! Research has shown time and time again that it is not just physical health benefits that are associated with visiting the countryside. It also provides opportunities to relax, find peace, inspiration and contemplation, thereby improving the sense of well-being. As well as the many informal activities that you can make use of in the countryside of Tameside, from the widespread availability of walking and cycling routes to spending time with the family having a picnic, the Countryside Service also provides more formal opportunities for health and well-being such as countryside events and activities. http://tameside.gov.uk/countryside/health	Research Evidence Benefits Wellbeing/Quality of Life Practitioner Diversity

Organisations	Promotional/organisational literature	Theme
Districts in Greater Manchester – Wigan	Learning Outdoors There is a wealth of evidence that supports the benefits of outdoor learning in natural environments, and Wigan has plenty of unique park and green space locations to explore. Our qualified Activity Leaders will work alongside you to ensure that our learning offer is tailored specifically to your group, and help you develop programmes of study to stimulate and maximise the potential of young learners. http://www.wlct.org/wigan/parks/learning-outdoors/	Research Evidence Benefits Practitioner Diversity
Environment Agency	Regular contact with the natural environment has many benefits including: • Reduction in stress; • Increased physical activity; • Stronger communities; • An increased awareness of the value of the natural environment. Physically active people have a lower risk of dying from coronary heart disease, type II diabetes, hypertension and colon cancer. Stress and mental ill health are becoming more common, and the public health costs associated with these conditions are growing. http://www.environment-agency.gov.uk/homeandleisure/recreation/37903.aspx	Benefits
Greater Manchester Local Record Centre	As the temperature starts to rise and the days lengthen, summer gives us the chance to spend an increasing amount of time out of doors connecting with nature and enjoying its wonders. http://www.gmwildlife.org.uk/index.php	Connectivity
Manchester Forest School	Forest Schools originated in Europe in the early 20th century as a way of teaching about the natural world. By the 1980s it became part of the Danish early years programme. The Forest School model originates in Scandinavia and involves participants journeying by foot (if possible) to a local woodland environment to learn outdoors on a regular sustained basis. It is a long-term client/child-led, educational process that promotes, observes and explicitly supports the social, emotional and physical development of children, young people and adults in an outdoor, preferably woodland, environment. http://www.foresteducation.org/woodland_learning/forest_schools/background_to_fei_schools/ There is no wi-fi in the forest but we promise you will find a better connection. https://www.facebook.com/ManchesterForestSchool	Connectivity

Organisations	Promotional/organisational literature	Theme
Friends of the Earth	Nature as our ally … Nature could be a powerful ally in helping societies cope through new cost-effective strategies to improve public health. One study found that a 10% increase in green space near to where people lived correlated with a significant fall in health complaints (equivalent to a 5-year reduction in average age). Several researchers have demonstrated that office workers experience lower job stress, higher job satisfaction, and fewer illnesses if they have views of natural areas compared to those who don't. Other research found that children suffering from stressful situations recovered more quickly in areas with access to nature. Guest blog: Tony Juniper, former Friends of the Earth Director http://www.foe.co.uk/news/ailing_economy_nature_healthy_41259	Research Evidence Research Evidence
Manchester Museum	Trees are important to all of us. People plant trees to commemorate loved ones, climb them as children (and sometimes as adults) and worry about them being cut down. Collecting Trees investigates the important relationship we have with trees and the impact they have on the world around us. The objects we've collected are part of our 'Trees - collecting to connect' project demonstrating how important trees are. This exhibition forms part of the 'Festival of Ecology' taking place across the UK to celebrate 100 years of the British Ecological Society. museum@manchester.ac.uk	Connectivity
Natural England	Linking people with the natural environment - There are many ways to connect with the natural environment. An outdoor experience can benefit your health, enable you to get closer to nature, be used as an educational opportunity or help with building community partnerships – the list is almost endless. http://www.naturalengland.org.uk/ourwork/enjoying/linkingpeople/default.aspx Natural England wants to ensure that everybody has the opportunity to use, understand, engage with and be inspired by the natural environment. We also want an increasing number of people to take action to conserve it. http://www.naturalengland.org.uk/ourwork/enjoying/default.aspx	Connectivity

Organisations	Promotional/organisational literature	Theme
NHS - Manchester Mental Health and Social Care Trust	This element of the Recovery Pathways service uses horticultural activities to support and build wellbeing. Activities give opportunities for being physically active, for learning to notice and connect with the natural environment, for learning new skills, and for nurturing a 'green planet' via the growing of decorative and edible plants, and the care of trees, shrubs and lawns. The mix of practical skills and theoretical knowledge (learning the names and growing needs of plants for instance) is flexibly mixed to suit a variety of interests and abilities. http://www.mhsc.nhs.uk/services/recovery-pathways-wellbeing-through-art,-people-and-places/green-wellbeing.aspx	Wellbeing/Quality of Life Connectivity
National Trust in Greater Manchester • Dunham Massey • Holcombe Moor	Have a wild time this summer. The summer holidays are one of the best times of the year for getting the kids up off the sofa, jumping into the great outdoors and having heaps of fun discovering new places. Our research has shown that an enjoyment of nature and wildlife is an alien concept to many children, so we've committed to try and inspire a generation of children to get outside and discover just how much fun can be had with the natural world. http://www.nationaltrust.org.uk/what-we-do/big-issues/ To keep the kids entertained throughout, we're encouraging children to complete our '50 things to do before you're 11 3/4' wild-time challenge and see if they can try and tick off more than 25 things on the list during the six weeks of summer http://www.nationaltrust.org.uk/visit/families/events-for-families/ Last year our Natural Childhood report found that children in the UK were becoming disconnected from nature and the outdoors. http://www.nationaltrust.org.uk/what-we-do/big-issues/nature-and-outdoors/natural-childhood/	Research Evidence Connectivity

Organisations	Promotional/organisational literature	Theme
Prison Service • MYOI Hindley, Wigan • HMP Buckley Hall, Rochdale • HMP Styal, Cheshire	The University of Central Lancashire's Healthy Settings Development Unit led the Target Wellbeing's prisons programme. This involved ten prisons and one young offenders institute to deliver three projects – Greener on the Outside: Prisons (GOOP); Offender Focused Resources; and a Family and Community Health Literacy project. Partners included The Conservation Volunteers, Forestry Commission, Groundwork, Primary Care Trusts, and Lancashire County Council. Key achievements included a Green Gym® model for prisons. Other outcomes were improved self-management; increased sense of belonging within local community; improved levels of self-esteem; an increased number of people using open space for physical activity; an increased number of people involved in food growing; an improved availability of healthier foods; improved levels of food preparation and cooking skills. We set up the project because there is a growing evidence base concerning the positive impacts of contact with nature and green space on health, particularly in relation to increased levels of physical activity and mental well-being. There is increased recognition of the value of gardening and food growing as a vehicle for positively influencing knowledge, understanding and behaviour related to healthier eating. Michelle Baybutt, University of Central Lancashire, mbaybutt@uclan.ac.uk http://www.targetwellbeing.org.uk/profile/greener_outside	Across Sector Partnership Research Evidence Connectivity Wellbeing/Quality of Life
Ramblers	Walking for Health is England's national network of health walk schemes, offering free short walks over easy terrain led by trained walk leaders. The brainchild of GP Dr William Bird, who started leading health walks from his surgery in 1996, Walking for Health is now a national programme. It supports around 600 local schemes across England that deliver a range of group walks for over 75,000 regular walkers. Since April 2012 the Walking for Health national centre has been run by the Ramblers and Macmillan Cancer Support. This centre delivers strategic guidance for the overall programme and provides schemes with support and free resources such as training, insurance, and national promotion. The local schemes are run by a variety of organisations including councils, the NHS, charities and voluntary groups. http://www.ramblers.org.uk/what-we-do/promoting-walking/our-walking-projects/walking-for-health.aspx	Across Sector Partnership

Organisations	Promotional/organisational literature	Theme
RSPB	We work with partners … Together we're helping transform farms, parks, cities and communities into homes for nature - providing space for nature across the UK and creating better health and wellbeing for everyone. http://homes.rspb.org.uk/page/what-we-do Physical inactivity has serious effects on human health, which cost the UK economy more than £8 billion a year. Research commissioned by the RSPB underlines the strong links between good physical health, good mental health and the natural environment that we strive to protect. Outdoor activities, particularly walking, offer a cheap and accessible route to better health for all, and address many of today's pressing public health issues. The continued use of green space for physical activity is strongly linked to the quality of the landscape - in terms of beauty, diversity, and contact with nature. http://www.rspb.org.uk/ourwork/policy/health/index.aspx	Ecosystem Approach Wellbeing/Quality of Life Research Evidence Connectivity
The Conservation Volunteers	Green places are necessary for emotional, physical and social well-being. Parks, fields and woods are great places to give young people learning opportunities that they cannot get in a classroom setting. They're great places for exercise and physical activity – helping people get fit and feel good. They're great for growing fresh, healthy food – and bringing people together to share the work and share the harvest. A well-used green place is a classroom, a gym, a playground and a sanctuary. It is a place that is good for people as well as for wildlife. http://www.tcv.org.uk/about/who-we-are/join-in-feel-good	Ecosystem Approach
The Woodland Trust	Woodland walks for body, mind and soul. Walking in woods offers all sorts of physical and mental health benefits. Perhaps that's why the Japanese, who believe very strongly in the restorative power of nature, call it *shinin-yoku* "forest bathing". https://www.woodlandtrust.org.uk/search/?Query=woodland+walks	Benefits

Organisations	Promotional/organisational literature	Theme
Wildlife Trust • Cheshire (Stockport, Tameside, Trafford)	The UK's biggest ever campaign to reconnect children with nature and outdoor play has been launched by the newly formed Wild Network, as it encourages the nation's parents to swap some of their kids' screen time for wild time. Swapping thirty minutes of screen time for an extra half an hour of wild time every day would decrease children's time in front of screens by ten per cent. This could help increase levels of physical activity, alertness and ultimately improve their well-being. The Wild Network … is leading a campaign calling for more wild time for every child, every day. Members of the network include The Wildlife Trusts, RSPB, Play England and the NHS Sustainable Development Unit. http://www.cheshirewildlifetrust.org.uk/news/2013/10/25/its-time-re-wild-our-kids	Connectivity Wellbeing/Quality of Life Across Sector Partnership
Wildlife Trust • Lancashire	The Lancashire Wildlife Trust is committed to protecting wildlife, restoring biodiversity and connecting people with the natural world in Lancashire, Manchester and North Merseyside. http://www.lancswt.org.uk/jobs The Growing Healthy Naturally Project - it's recognised that a lot of the work that the Trust does, helps to encourage healthier lifestyles. The aim of this project is to expand on this and offer consistent high quality opportunities in a safe outdoor environment to promote greater use of the outdoors by schools…The Growing Healthy Naturally project is a 3 year project which is funded by the Department of Children, Schools and Families. http://www.lancswt.org.uk/Our-Work/community-projects/growing-healthy-naturally	Connectivity
Visit Manchester (the tourist board for Greater Manchester)	Alexandra Park - If you are in the mood for a bit of historic immersion, go to this 60-acre park in Whalley Range. Opened in 1870 its initial purpose was to deter the working men of Manchester from the alehouses during their day off, and to encourage them instead to spend time with their families pursuing morally and physically healthier activities. Features include a lime walk, raised terrace walk and bandstand. http://www.visitmanchester.com/what-to-do/naturereserve/MAN-39051_alexandraparkma	History